3. *A Revision of the South African Gryllacridae (Orthoptera Saltatoria).* By H. H. Karny (Buitenzorg, Dutch East Indies).

(With 25 Text-figures.)

Through the kind mediation of Dr. B. Uvarov (British Museum, London), I received from the Trustees of the South African Museum (Cape Town) the whole Gryllacrid collection of that museum for study. Though this collection was not very large, it contained nearly all the species hitherto known from South Africa, including Péringuey's and Griffini's types, some of the species being represented by considerable series. This fact suggested the desirability of including all the known South African species in the following paper, and of giving keys for their determination. A study of the subfamily *Gryllacrinae* has already been based on material from the South African Museum by Griffini (141), Mon. Zool. Ital., xxii, 5, pp. 125–134 (1911), whilst the other subfamilies have been studied (partially) by Péringuey, Ann. S. Afr. Mus., xv, pp. 401–425, pl. xlii (1916). Though Griffini stated in his paper that the collection studied by him was somewhat poor in species, it contained practically all the known South African Gryllacrinae : there are not very many species of this subfamily occurring in South Africa, whereas in Tropical Africa the subfamily is very rich in species, as may be seen from Griffini's " Catalogo " (126), Boll. Mus. Zool. Anat. Torino, xxvi, No. 634, pp. 5–19 (1911). This is also the reason why I have included in the following species-keys of Gryllacrinae the South African species only, whereas in the species-keys of the other subfamilies all the species known at present from the African continent have been included. In the keys to genera and subfamilies, on the other hand, I have included such only as are represented by one or more species in South Africa. As to the literature, I refer to Kirby's Catalogue of Orthoptera, vol. ii, 1906. Only the more recent records are cited in the following pages.

I take this opportunity of expressing my sincerest thanks to all those who have aided my studies by lending me material from their collections, and I hope this paper will stimulate some of the South African entomologists to pay further attention to this very interesting

group of insects, which at present is still far from being completely known.

Key to the Subfamilies.

1. Fastigium verticis convex or plain, never sulcate.
   2. Fore coxae without any spine. Pronotum dilated cephalad. Fore tibiae spined above . . . . . *Stenopelmatinae.*
   2′. Fore coxae with a spine or tooth.
      3. Fore tibiae, except for the apical spurs, spineless above. Winged or wingless species . . . . . *Gryllacrinae.*
      3′. Fore tibiae spined above. Always wingless . . *Henicinae.*

1′. Fastigium verticis compressed between antennae, longitudinally deeply sulcate or divided by a vertical furrow into two tubercles.
   2. Tarsi depressed, with long appendages . . . *Schizodactylinae.*
   2′. Tarsi compressed, without appendages . . . *Rhaphidophorinae.*

Subfam. STENOPELMATINAE.

This subfamily is represented in Africa by one genus only.

Genus Maxentius Stål.

Key to the Species of Maxentius.

1. Fore tibiae, except for the apical spines, with 3 or 4 spines above on the inner side. The two curved, spine-like processes of ♂ 10th tergite close together (fig. 2).
   2. Except the dark tips of spines and the black eyes, uniformly pale in colour, in life almost semitransparent white (*teste* Péringuey). *Maxentius canus* Péringuey.
   2′. Whitish grey; pronotum darkened along fore and hind margin, meso- and meta-notum and abdominal tergites with broad blackish bands along hind margin . . . *Maxentius kuhlgatzi* Karny.

1′. Fore tibiae, except for the apical spines, with only 2 spines above on the inner side. Spines of 10th ♂ tergite widely separated from each other, near the lateral margin (fig. 3).
   2. Brownish yellow; pronotum along fore and hind margin, and the following dorsal segments along hind margin each with a broad blackish transverse band. Fore femora without spines. Hind femora spined along lower inner margin only . *Maxentius pallidus* (Walker).
   2′. Uniformly dark brown. Fore and hind femora spined below on both margins . . . . . *Maxentius pinguis* (Walker).

Maxentius canus Péringuey (*loc. cit.*, p. 415).

1 ♂ (type), Port Nolloth, 1912.

Without doubt a good species. The number of spines on legs somewhat variable, different on right and left side, but diverging enough from the other species to justify the species being based upon

this character. All spines with dark tips. Fore femora with 3 to 4 rather long, more or less horizontal outwardly directed spines on the outer margin; 3 to 4 shorter ones more downwardly directed on the inner margin. On middle femora along lower fore margin distad from the middle 3 rather long projecting spines; the hind margin of the left femur with 1 spine at the end of basal third and 2 in distal third, on the right femur 3 spines in basal half and 2 shorter ones near the knee. On the hind femora, the spines below on the inner margin are short and more downwardly directed, on the outer margin long and projecting outwardly; with 7 on the inner margin on both legs,

Fig. 1.—*Maxentius canus.*—Above: Left hind tibia, seen from inside above. Below: Lateral part of basal abdominal tergites.

irregularly distant from each other, beginning well before the middle; on the outer margin of left femur 1 short spine near base, then 3 longer ones before the middle rather close together, with 2 separated ones in the middle, and finally, near the knee, 4 closer together, the first two of these being short, the third the longest; on right hind femur, 3 rather separated spines before the middle, increasing in size distad, then a space without any spines, and finally, near the knee, 3 close together, the middle one of them being hardly half as long as the two others, the first somewhat longer than the third. In spite of their variability, it is quite clear that the rows of spines on the hind legs begin distinctly nearer the base than in *kuhlgatzi*.

Fore tibiae spineless above on the outside, with 3 to 4 spines on the inside, the last (distal) one of them being decidedly the longest; below with but 1 spine close before the apex on the inside, and with

3 to 4 on the outside. Middle tibiae above with 3 spines on either side; below with 2 spines in distal half of outer side, and 1 on inner side inserted between the 2 outer ones. Hind tibiae spineless below, except for a single spine on the outside just before the apex; along the whole inner margin densely and pectinately long-pilose (fig. 1), the bristles on the outside being short and scanty; above on the outside 5 spines and a pectiniform row of bristles as well, on the inside with 6 to 7 spines and with scanty, short bristles. The inner apical spurs of hind tibiae about twice as long as the outer ones, reminding one of *Stenopelmatus* by their compressed, nearly spade-like shape.

Péringuey's statement that the first three abdominal tergites are smooth laterally could be easily misunderstood; the surface itself is indeed smooth, without the numerous, finely spined tubercles present in *pinguis*, but the second and third tergites possess a lateral oblique costula (fig. 1) just as in the other species.

Maxentius kuhlgatzi Karny.

1910. Karny, Jenaische Denkschr., xvi (Schultze, Forsch. Südafr., iv), p. 36.

1 ♂ (det. Karny), S.W. Africa, Swakopmund.

Measurements.—Length of body 40 mm., pronotum 7 mm. in the middle line, 8 mm. on lateral lobes, fore femora 11 mm., middle femora 10·5 mm., hind femora 16·3 mm., hind tibiae 17·3 mm.

General colour pale greyish white; frons below antennae and eyes with a very ill-defined, nebulous bluish-grey spot on either side, and almost the whole clypeus is also of the same colour. Cheeks and occiput very diffusely darkened with grey, this colour not being uniform but spotted with paler, thus showing more or less linear or reticulate markings, but all very indistinctly defined and nebulous. Pronotum along fore and hind margin with a broad, dark grey transverse band, but these also not well defined. Lateral lobes with a nebulous, inverted-V-shaped dark band along the hind oblique sulcus and the ascending branch of the V-sulcus. Between the two branches of the V-sulcus, a very nebulous dark cloud extending on to the disc. Meso- and meta-notum and the first to eighth abdominal tergites along the hind margins very broadly blackish, ninth tergite slightly darkened with grey, tenth quite pale, but the two spine-like processes dark. All femora diffusely brownish grey before the knee, the knee itself pale again; all tibiae greyish yellow.

Arrangement of Spines —Fore femora on inner margin below with 1

to 2 dark-tipped spinelets in distal half, quite unarmed on the outside. The left middle femur outside with 1 spinelet close before the knee, inside with one at the same place and, moreover, with a similar one near base. Right middle femur inside with 4 rather long spines in basal two-thirds, outside with 3 in distal half (the first being placed in the middle of femur). Hind femora with 4 on the outer margin and 4 to 7 spinelets on the inner margin below, the outer much longer and stronger than the inner ones; the spines beginning at the middle of the femur or a little before it, but never as far basally as in *canus*. Fore tibiae above on the inside with 3 long spines, increasing in length distally; below outside with 3, inside with but 1 spine close before the apex (the apical spines being not included in these numbers). Middle tibiae spined exactly as in *canus*. Hind tibiae below with a single spine just before the apex, above outside with 4 spines (right leg)

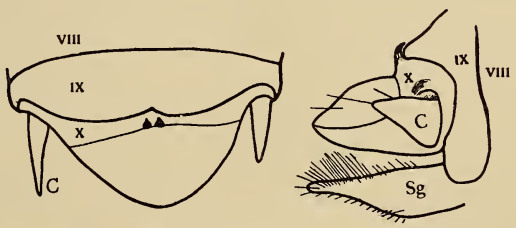

Fig. 2.—*Maxentius kuhlgatzi*. End of ♂ abdomen in dorsal and lateral view.

or 7 (left leg), the first of these in the latter case very small, and hardly distinguishable with certainty; above inside with 6 spines on either tibia; bristles quite as in *canus*.

Abdomen.—Second and third tergite laterally, each with an oblique costula, finely denticulate under the microscope (as in the other species, compare fig. 1). The surface before it and the pleurae are smooth as in *canus*. Ninth tergite strongly produced backwards in the middle, much longer than the eighth, obtuse-angularly excised in the middle of hind margin (fig. 2). In *canus*, too, this tergite is decidedly longer than the eighth, though somewhat less strongly produced than in *kuhlgatzi*, and the median excision of hind margin is also deeper. The two spines of tenth ♂ tergite are placed quite close together just near the median line, but otherwise shaped as in *pinguis*, viz. hook-like, upcurved forwardly, dark blackish and acutely pointed at apex. We also find the same condition in *canus*, but the spines in *canus* are placed even closer together than in *kuhlgatzi*. The cerci of the latter are even shorter and thicker than in *pinguis*.

Maxentius pallidus (Walker).

Syn.: *fuscofasciatus* Stål.

The following material now before me (all det. Karny): 1 ♀, Transkei, Kentani, 1900; 1 ♀, Cape Town, x, 1889; 1 ♂, Cape Town, A. Miller, 1906; 1 juv. ♂, 1 ♀, Cape Town, L. Pursey, vii, 1885; 1 ♂, Ceres Div., Matroosberg, 4000 ft.; 1 ♀, Cape Town, 1875; 1 ♂, 1 ♀, Cape Town; 1 ♂, Sir Lowry's P., Pursey; 1 juv. ♂, Gt. Winterhoek, Tulbagh, 4500 ft.

The differences from *pinguis* have already been indicated by Stål and Brunner quite satisfactorily. It is true that the spination of the femora is not absolutely reliable, but it agrees with the descriptions in by far the most cases. It may be, however, that in *pinguis* the fore femora are also occasionally quite spineless, and in one of the *pallidus* specimens now before me one hind femur possesses also one spinelet outside, the other even two. But this is, of course, an exceptional case, in all the other *pallidus* specimens the hind femora are quite spineless outside, and in a great number of them even on the inside too. A much more reliable character seems to be the coloration of the body. To this is to be added that in *pallidus* (and in this only of all the four species) a lateral costula is present on the third tergite only; on the second there is usually on this place a pale stripe, but absolutely no sculpture at all. The surface in front of it is either quite smooth as in *canus* and *kuhlgatzi*, or with a very fine punctuate sculpture, and thus quite different from that of *pinguis*. The hind femur shows on the inner side just below the upper margin a sharp edge as in *canus* and *kuhlgatzi*, but no row of spines below it, as is the case in *pinguis*. The spines of the tenth ♂ tergite, finally, are at the same place as in *pinguis*, viz. removed laterally, but they are not acutely pointed and not hook-like and curved forward as in all the other species, but simply dentiform, directed straight upward and rather obtusely pointed, quite pale.

Finally, according to the material now before me, *pallidus* and *pinguis* seem to be geographically separated, as has already been pointed out by Péringuey (*loc. cit.*, p. 414), *pallidus* occurring in Cape Colony itself, *pinguis*, on the other hand, further north on the west (S.W. Africa) as well as on the east (Delagoa Bay).

Maxentius pinguis (Walker).

Syn.: *repens* Stål.

I have before me the following material (all det. Karny): 1 ♂, 1 ♀

without locality label; 2 ♂♂, 2 ♀♀, S.W. Africa, Otjiverongo (S.A.M. Exp.); 1 ♀, Delagoa Bay; 1 ♂, Dr. Melle, Areturus, 1915, Salisbury; 1 ♂, Nylstroom Dist., Transvaal, '06, A. Tucker; 1 ♂, S.W. Africa, Windhoek (S.A.M. Exp.).

This species too is very well characterised, not only by the uniformly dark colour of the upper surface of the body, but by the hind tibiae being covered all round with equally dense and equally long bristles as in *pallidus*, and not with the two rows of pectiniform bristles so very striking in *canus* and *kuhlgatzi*. Ninth ♂ tergite—quite as in

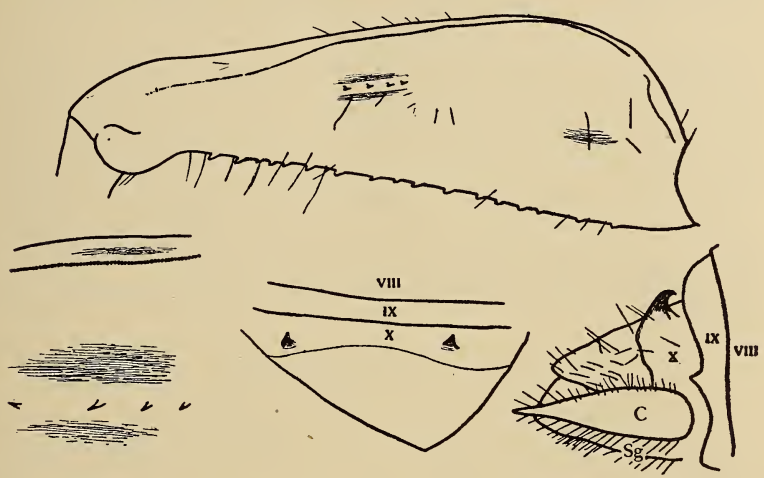

Fig. 3.—*Maxentius pinguis*. Above: Hind femur from inside, showing the stridulating structures. Below: Stridulating structures of hind femur more magnified (left); end of ♂ abdomen in dorsal (middle) and lateral view (right).

pallidus—transversely truncate behind, not produced backwards and not longer than the eighth. The two spines of tenth ♂ tergite (fig. 3) are placed far to the sides as in *pallidus*; they are blackish, however, acutely pointed, hook-like, and upcurved forwards as in *canus* and *kuhlgatzi*.

The second and third abdominal tergites each possess laterally an oblique costula as in *canus* and *kuhlgatzi*. The surface in front of it, however, is, contrary to all the three other species, strongly sculptured: there are in front of each costula and, moreover, in the same region of the first tergite as well as in the neighbourhood on the pleurae, slightly elevated, polygonal, but not well-defined tubercles, each of them ending in a fine spinelet; behind the costula the second and third tergites are quite smooth. With that areolation there corre-

sponds on the inner side of the hind femur not only a strong longitudinal ridge close below the upper margin, finely denticulate under the microscope, but also a slightly elevated longitudinal pad at about the middle of the inner surface, furnished with some acutely pointed spines (fig. 3). This row of spines is absent in all the other species. There can be no doubt at all that we have here to do with a stridulating sculpture. Though Brunner v. W. (Mon., p. 252) had already supposed this, it was but recently that Duncan (Entom. News, xxxiv, pp. 73–77, 1923) had described similar stridulating sculptures from *Stenopelmatus*, and also observed the stridulation in living specimens, so that now no doubt remains as to the significance of such sculptures. Further investigations are now necessary to show whether auditory organs cannot also be found in Stenopelmatinae. It is true I found on the pleurae of all the four *Maxentius* species a narrow opening (fig. 1), at the same place where the auditory organ in short-horned grasshoppers is located, but I am inclined to consider this as an enlarged spiracle rather than as a tympanum. The spiracles of the following segments have a similar shape, though they are much smaller. At all events, a further and more detailed anatomical study of this question is very desirable.

Subfam. GRYLLACRINAE.

Key to the South African Genera of Gryllacrinae.

1. Tegmina and wings fully developed . . . . *Gryllacris* Serville.
1′. Tegmina and wings quite absent.
    2. Fore and middle tibiae with 3 to 4 spines on either side (the apical spines excepted) . . . . . *Eremus* Brunner v. W.
    2′. Fore and middle tibiae with only 2 spines on either side (the apical spines excepted) . . . . . *Ametroides* Karny.

Gen. Gryllacris Serville.

This genus, though very rich in species in Tropical Africa, is represented in South Africa by not more than two species, viz. :

Head and pronotum with black linear markings. Tegmina and wings reaching far beyond abdominal apex and hind knees . . *Gryllacris lyrata* Kirby.
Head and pronotum without black lines. Tegmina and wings hardly reaching abdominal apex . . . . . *Gryllacris nana* Brunner v. W.

Gryllacris lyrata Kirby.

Compare Griffini (141), *loc. cit.*, p. 128.

1 ♂ (det. Griffini), Kafue Riv., N. Rhodesia, J. Drury, 1906 (wings spread on both sides); 1 ♂ (det. Karny), S.W. Africa, Tsumeb, 1920

(not spread); 2 ♂♂ (det. Karny), Salisbury, September 1913 (not spread); 1 ♀ (det. Griffini), no locality (spread on both sides); 1 ♀ (det. Griffini), Delagoa Bay, i, 1890 (spread on both sides); 1 ♀ (det. Karny), Khama's, Bechuanaland (spread on both sides); 1 ♀ (det. Karny), Grootfontein, S.W. Africa, January 1919, R. Lightfoot (not spread); 1 ♀ (det. Karny), Potgieters Rust, Transvaal, G. M. Melle, October 1919 (not spread); 1 ♀ (det. Karny), without locality label (not spread); 1 ♀ (det. Karny), Salisbury, September 1913, on rose flowers (not spread); 1 juv. ♀ (det. Griffini), Delagoa Bay, i, 1890; 1 juv. ♀ (det. Karny), Windhoek, S.W. Africa, Dr. Froemberg, 1909.

The black lines on head and pronotum thick and well defined in all imagines, whilst in larval stages hardly distinguishable, nebulous, and not very dark. The hind tibiae of almost all the specimens have a well-defined, brownish-violet base, like certain species of the Australian *munda* group. Size somewhat variable, the tegminal length varying from 22·4 to 28·5 mm. (♂), and from 24 to 28·8 mm. (♀).

Tegmina.—Three to five simple or (in some cases) simply forked precostals, the last of them convex forward and usually roughly parallel to the costal vein. This latter slightly convex forward in basal part, afterwards straight, reaching fore margin between the middle fifth and third. Costal area hyaline like the neighbouring areas, gradually dilated distally, broadest at about the middle of tegmen. Subcosta arising from tegminal base, slightly S-curved, emitting before the end 2 (exceptionally 3) fore branches into fore margin, or the first of them running into costal vein. Radial vein (fig. 4) anteriorly pectinately five- to six-branched, exceptionally only four-branched, the branches longitudinally directed, rather close to each other, all running into fore margin; the ramification beginning close after the origin of radial sector, in one case even just before it. Radial sector arising from radial vein between the middle of tegmen and the end of middle fifth, posteriorly pectinately four- to five-branched, the hindmost of the branches usually about as long as stem of sector, though sometimes distinctly shorter or decidedly longer; second and third branch arising exceptionally by a common stem (fig. 4). Medial vein free from base, very close to radial stem, from cubital vein fully four to five times as distant as from radial, anteriorly pectinately three-branched; chief fork just after the end of basal fourth, bifurcation of hind branch about at the end of basal third; but in one case the fore branch of this second fork is bifurcate again just thereafter (fig. 4). The hindmost branch may be

united before the end for some distance with cubital vein or with the preceding medial branch, though thereafter running freely again into apical margin. Cubital vein free and simple, without any relation to medial vein, slightly S-curved near medial fork. Then follow further 4 free, simple longitudinal veins.

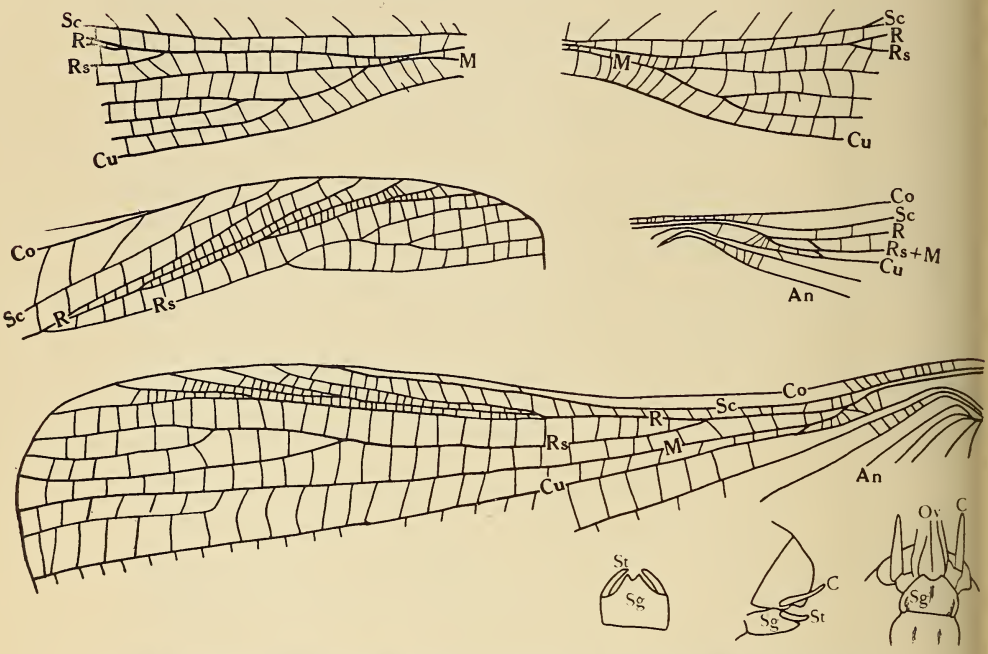

Fig. 4.—*Gryllacris lyrata*. Left middle : ♀, apex of right tegmen, with an anomalous ramification of radii sector. Right middle : ♀ from Delagoa Bay, anomalous base of left hind wing, seen from below. Above : ♀, ramification of medial vein on both tegmina (right normal, left with one supernumerary branch). Below : the same ♀, preanal part of left hind wing, anomalous ; media and radii sector arising separately from radial vein. Lowermost : ♂ subgenital plate, end of ♂ abdomen in lateral view, end of ♀ abdomen in ventral view. All figures of the same magnification.

Hind Wings.—Costal area with rather dense cross-veins from base till deviation of radial stem from subcostal vein, then for a long distance without cross-veins, and just before the end with one or a few obliquely directed, rather strong cross-veins again. Radial vein forked as in tegmina, but the ramification beginning already before the middle, the branches, therefore, directed still more longitudinally. In one of the hind wings before me (fig. 4, above) the ramification of radial vein is somewhat anomalous ; it emits at first one hind branch

which is simply forked in its distal part; just after this chief fork, the fore branch is forked again into a simple fore branch and a hind branch which is bifurcate again shortly beyond its middle; in all, five branches as usual, but the order of their ramification is anomalous. Rs+M arising from radial stem where this curves again into a longitudinal direction after the deviation from subcostal vein; Rs+M touches at one point the cubital vein (which has a free origin and remains simple), or emits a short M_2 against it. The simple medial vein arises from Rs+M at about the end of basal third; the radial sector is itself then pectinately four-branched backward in apical third of wing-length, but one of the branches may have a further short apical fork. In one case the first cross-vein between radial vein and Rs+M is decidedly oblique (fig. 4, right middle), thus giving the impression of a doubled Rs+M root. Is this perhaps an atavistic formation signifying some relations to the Neotropical species and to the Australian *munda* group? In all the other cases now before me the Rs+M root is always simple in *lyrata*. But there is another hind wing (fig. 4, below) in which radial sector and medial vein show no relations at all to one another, both arising quite independently and freely from the radial stem, viz. the simple medial vein near the wing-base where radial stem deviates from subcostal vein, and the radial sector just before the end of basal third of wing-length, then being pectinately three-branched backward in the apical third. I am, however, inclined to believe that this is a secondary dissolution of Rs+M rather than a primitive formation, though there is no doubt that the latter condition is suggested by the case with exceptionally doubled Rs+M root just mentioned. Middle part of anal fan with thirteen to twenty cross-veins in any area.

Gryllacris nana Brunner v. W.

Compare Griffini (141), *loc. cit.*, p. 126.

1 ♀ (det. Griffini), Cape Colony, Port St. Johns, "Found in a cocoon of leaves under tree bark."

Griffini has published this specimen and a second one I have not before me as "*nana* var," without giving a name to that variety. This, in fact, is nothing else than the true *nana*, as the chief character of Griffini's variety cannot stand, because Brunner's description of his type specimen is incorrect in this respect, as I have shown in my revision of the Gryllacridae of the Vienna Museum. Griffini had not

seen Brunner's type specimen, but knew it from Brunner's description only. Supplementing Griffini's description, I give here a figure of the ♀ subgenital plate, and a discussion of the tegminal and wing venation, which have not yet been described either by Griffini or by Brunner.

Tegmina (fig. 5).—Two simple precostals ; at the end of the second one the fore margin being slightly emarginate. Costal vein slightly convex forward, simple, reaching fore margin not before the apical fourth of tegmen. Costal area in the same condition as the others, band-like, though somewhat wider than the others, broadest at about the middle of tegmen. Subcostal vein arising from tegminal base,

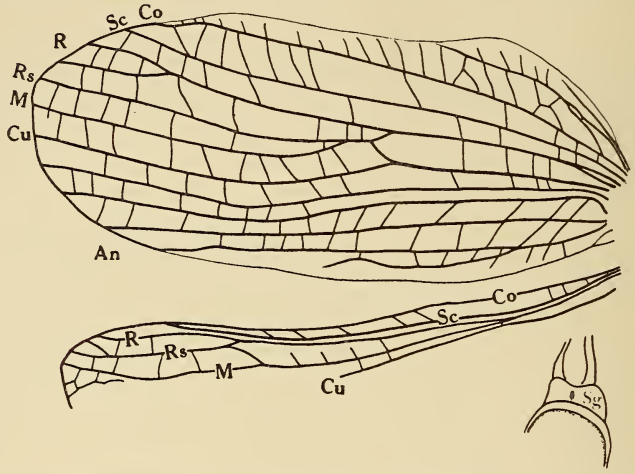

Fig. 5.—*Gryllacris nana*, ♀. Left tegmen, preanal part of left hind wing, and ♀ subgenital plate.

slightly S-curved, with a very small, simple, apical fork. Radial vein simple or simply forked at the end. Radial sector arising from radial vein somewhat before the middle of tegmen, and receiving just after its origin a distinctly oblique cross-vein from the cubital stem which may perhaps represent the base of the medial vein. At the distance of a cross-vein from it the simple media branches off backwards from the radial sector, so that it cannot be said with certainty whether in fact it starts from the radial sector, or whether from the cubital stem, being only united near the base with the radial sector for some distance. Radial sector itself with a very small apical fork. Cubital vein simple. There follow, furthermore, five simple longitudinal veins ; the common stem of the last two not quite half as long as the radial stem from base to the origin of radial sector. The last longi-

tudinal vein is less developed than the others, ending near the middle of tegminal hind margin.

Hind wings decidedly cycloid, of a similar condition apically as the tegmina, otherwise hyaline. A moderately long space in costal area before its middle without cross-veins. Subcostal and radial veins simple throughout. Medial vein simple, arising from the radial stem where this curves again into the longitudinal direction after the deviation from the subcostal vein. Radial sector arising from radial stem not before the apical third, receiving (on both wings !) just after its origin a very distinct oblique vein from the medial, then simple at the end or with a very small apical fork. Cubital vein free from base, receiving from medial root a short inconspicuous cross-vein ; thence simple till the end. Middle part of anal fan with 7 to 9 cross-veins in every area.

Gen. Eremus Brunner v. W.

Key to the South African Species of Eremus.

♂♂.

1. ♂ subgenital plate produced at the end into a narrow median lobe showing a sharp, deep fissure (fig. 7) . . . *Eremus sphinx* (Gerstaecker).
1′. ♂ subgenital plate without any median fissure at the end.
2. ♂ subgenital plate produced at the end into a broadly triangular median lobe, on either side of which there is a small triangular lateral lobe (fig. 9) . . . . . *Eremus chimaera* Griffini.
2′. ♂ subgenital plate not lobate, rectangular, with rounded angles and a straight or slightly convex hind margin *Eremus glomerinus* (Gerstaecker).
3. Clypeus and upper side of femora darkened brownish. Tarsi spotted piceous . *Eremus glomerinus* (Gerstaecker) s. str.
3′. Clypeus, femora, and tarsi uniformly pale brownish yellow *Eremus glomerinus* var. *knothae* Griffini.

♀♀.

1. Ovipositor broad, rounded at the tip (fig. 6). ♀ subgenital plate transversely rectangular, with rounded angles, hind margin scarcely emarginate *Eremus obtusus* nov. sp.
1′. Ovipositor evenly pointed at apex or even slightly emarginate above.
2. ♀ subgenital plate divided by a broad angulate excision into two large, lateral diverging lobes (fig. 7) . *Eremus sphinx* (Gerstaecker).
2′. ♀ subgenital plate with backwardly directed lobes or without any excision at all.
3. ♀ subgenital plate with a rectangular excision (fig. 8). Ovipositor somewhat longer than the body *Eremus sphingoides* nov. sp.
3′. ♀ subgenital plate either without any excision or with a narrow fissure. Ovipositor shorter than the body.

4. ♀ subgenital plate short, slightly rounded or transversely truncate at the end, with an S-like emargination laterally (fig. 9). Ovipositor about one and a half times as long as hind femur, decidedly shorter than the body, evenly obtusely pointed at apex . *Eremus chimaera* Griffini.

4′. ♀ subgenital plate short, bilobate, the lobes lying close together, backwardly directed, rather acute, separated from each other by a narrow median slit. Ovipositor a very little longer than hind femur, strikingly broad, at the end pointed from below, slightly emarginate above before the acute apex (fig. 10)
Eremus glomerinus (Gerstaecker).

5. Clypeus and upper side of hind femora darkened brownish. Tarsi with pitchy spots
Eremus glomerinus (Gerstaecker) s. str.

5′. Clypeus, femora, and tarsi uniformly pale brownish yellow
Eremus glomerinus var. *knothae* Griffini.

Eremus obtusus nov. sp.

1 ♀ (type), Cape Town, P. C. Keytel, 1913.

Measurements.—Length of body 15·7 mm., pronotum 3·5 mm., fore femur 4·5 mm., left hind femur 8·7 mm., right hind femur 5·6 mm., ovipositor 12·3 mm.

Body more massive than in the other South African *Eremus* species, with short strong legs. General colour brownish yellow, some of the dorsal segments indistinctly darkened along the hind margin.

Head hardly wider in dorsal view than pronotum, obovate in frontal view. Boundary between occiput and vertex with two dark spots side by side, lateral to these a nebulous oblique band directed backwards and outwards. Fastigium of vertex fully one and a half times as wide as the first antennal joint, flattened in front, with rather obtuse lateral margins. No ocellar spots. Frons and mouth parts without any peculiarity. Pro-, meso-, and meta-notum as described by Griffini for *peringueyi*.

Fore tibiae, except the very small apical spines, with 4 well-developed spinelets below on either side, which are distinctly shorter than the tibia is thick, and somewhat adjacent. Middle tibiae with but 3 such below on inner margin; on fore (outer) margin there is basally present (on both tibiae) a supernumerary very small spinelet, thus 4 in all, the first of them being much smaller than the others. Hind femora very thick and strong, with 4 very small black-tipped spinelets on inner margin distally below and 3 such on the outer

margin. The right hind leg is without doubt a regenerate, being much shorter and feebler than the left, the femur spineless throughout. Left hind tibia cylindrical and spineless in basal third, flattened above in middle third, and with 6 very small, black-tipped spinelets on either side above. The right hind tibia is cylindrical throughout, showing only 1 very small spinelet on either side near the middle above; its apical spurs too are much less developed than on the left tibia.

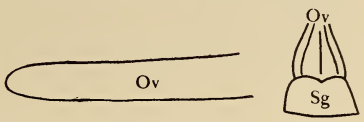

Fig. 6.—*Eremus obtusus*, ♀. Apex of ovipositor (left) and subgenital plate (right).

♀ subgenital plate (fig. 6) transversely rectangular, with the sides very slightly converging distally, hind margin with a very slight obtusangular emargination in the middle, slightly arcuate on either side. Ovipositor slightly curved at base only, thence quite straight, very wide (high), rounded off at apex.

At once easily distinguishable from all the other *Eremus* species; agreeing in most characters with *Ametroides peringueyi* (Griffini), but distinctly differing from it by the more numerous spines on fore and middle tibiae.

Eremus sphinx (Gerstaecker).

Compare Griffini (141), *loc. cit.*, p. 130.

1 ♂ (det. Griffini), Cape Town, S. 152; 1 ♂ (det. Karny), no locality; 1 ♂ (det. Karny), Cape Town; 1 ♂ (det. Karny), Cape Town, Barnard, 1914; 1 ♀ (det. Griffini), Stellenbosch, L. Péringuey, 1897; 1 ♀ (det. Karny), Cape Town, 1893; 1 ♀ (det. Karny), Ceres Div., Matroosberg, 4500 ft.; 1 ♀ (det. Karny), Cape Town, Master Péringuey, 1909.

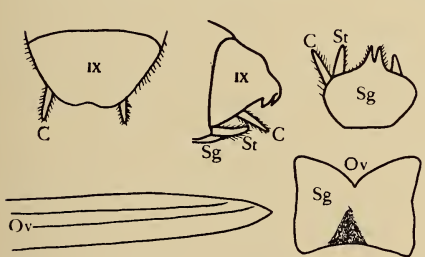

Fig. 7.—*Eremus sphinx*. Above: End of ♂ abdomen in dorsal, lateral, and ventral view. Below: Apex of ovipositor and ♀ subgenital plate. All figures of the same magnification, higher than in fig. 6.

As a completion of Griffini's detailed description (*loc. cit.*), I give here figures of the sexual characters of both sexes (fig. 7). I have, moreover, compared the ♀♀ with Gerstaecker's type specimen (Mus. Berlin), and have found that they agree completely with it in all characters. The sternites of the type, including the subgenital plate, have been cut open throughout

the length during preparation, and for this reason the shape of the subgenital plate is not easily distinguishable without comparison with other material and has therefore in all probability not been described by Gerstaecker. But, when comparing the type with unmutilated specimens, it can be stated with certainty that in the type too this plate had the same shape.

Judging by the material before me, this species seems to be by far the commonest *Eremus* species of Cape Colony.

Eremus sphingoides nov. sp.

1 ♀ (type), Cape Town, R. Trimen, vii, 1885.

Measurements.—Length of body 14·3 mm., pronotum 3 mm., fore femur 3·7 mm., hind femur 6·8 mm., ovipositor 15·3 mm.

Slender, very similar in general appearance to *E. sphinx*. Rather uniformly yellow-brown, without ocellar spots.

Head a little wider in dorsal view than pronotum, narrowly obovate in frontal view. Occiput and vertex very strongly convex. Fastigium verticis rather flattened, with rather sharp lateral keels ; together with the whole frons very finely microscopically and densely punctured, but beyond this the frons is without larger impressed punctures. First antennal joint narrow at base, then strongly dilated above and here more than half as wide as the fastigium of vertex. Frons with two dark, almost vertical stripes near the middle, which converge downwards and unite on the clypeus.

Pronotum somewhat wider than long, with the fore margin rounded, only slightly produced in the middle, hind margin emarginate. Fore cross sulcus very feebly indicated, otherwise the disc practically without distinguishable sculpture, the sulci on the lateral lobes normal, though little impressed. Shape of lateral lobes as in *shelfordi*.

Spines of fore and middle tibiae as in *shelfordi*, but the left fore tibia has on the outer margin basally below an additional supernumerary spine. Hind femora unusually well developed, below with 4 to 6 dark-tipped spinelets on either side. Hind tibiae as in *shelfordi*.

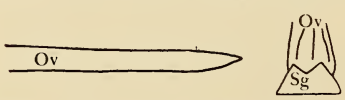

Fig. 8.—*Eremus sphingoides*, ♀. Apex of ovipositor and ♀ subgenital plate. Same magnification as fig. 6.

♀ subgenital plate with straight, distally strongly converging lateral margins, obtusangularly excised at apex, with obtusangular, scarcely rounded lobes (fig. 8). Ovipositor very slender, distinctly upcurved at base, thence almost straight, acutely pointed at apex.

In general very similar to *sphinx*, differing from it by the less numerous spines on fore and middle tibiae, and by the shape of the ♀ subgenital plate. Among all the species known up to now this is without doubt most closely allied to *E. shelfordi* from Mauritius, differing from it chiefly by the shape of ♀ subgenital plate, the lobes of which are much more rounded off in *shelfordi* (of which species I have studied the type in the Hope Department, Oxford) and the sides decidedly S-curved. In the circumstances it would have been natural to consider *sphingoides* as a variety or subspecies of *shelfordi*, but in view of their wide geographical separation I think it wiser to treat *sphingoides* as a distinct species, especially as no similar form is so far known from the entire intermediate region. Neither do we yet know the ♂♂ of either *shelfordi* or *sphingoides*—which may perhaps differ by more striking characters.

Otherwise, *sphingoides* cannot be mistaken for any other of the hitherto known species.

Eremus chimaera Griffini (141), *loc. cit.*, p. 133.

1 ♀, Cape Town, Master Péringuey, 1909 ; 1 ♂ (allotype), Cape Town, Barnard. Both det. Karny.

The hitherto unknown ♂ is somewhat smaller than the ♀, perhaps not yet quite fully developed, otherwise agreeing very well with the ♀. Apical tergite evenly rounded (fig. 9). As may be seen from the figure, there are visible under it two processes similar to those described by Griffini for *knothae*. ♂ subgenital plate rounded-triangular, on either side near base bearing an acutely triangular, somewhat outwardly curved process which evidently represents a rudimentary style fully fused at base with the subgenital plate. Articulated inserted styles not present.

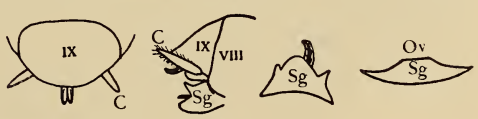

Fig. 9.—*Eremus chimaera*. From left to right: End of ♂ abdomen in dorsal and lateral view ; ♂ subgenital plate ; ♀ subgenital plate. Same magnification as fig. 7.

Eremus glomerinus var. *knothae* Griffini.

1908. Griffini (97), Atti Soc. It. Sci. Nat., xlvii, p. 6.
1911. Griffini (126), Boll. Mus. Zool. Anat. Torino, xxvi, 634, p. 17.
1911. Griffini (141), Mon. Zool. It., xxii, 5, p. 133.
1911. Griffini (143), Atti Soc. It. Sci. Nat., l, p. 242.

1 ♀ (det. Karny), Barberton, Transvaal, H. Edwards; 1 ♂ (det. Karny), Transvaal, Pilgrims Rest, L. Schunke.

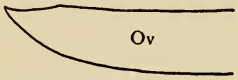

Fig. 10.—*Eremus glomerinus knothae*. Apex of ovipositor, of the same magnification as fig. 7.

A detailed description has already been given by Griffini; as an addition to this, I give here a figure of the very characteristic apex of the ovipositor (fig. 10).

Genus Ametroides Karny.

This genus is represented in South Africa by a single species only, viz. *peringueyi* (Griffini). For South West Africa there is to be added *namaqua* (Karny) (Jenaische Denkschr., xvi, Schultze, Forsch. Südafr., iv, p. 39, 1910). I have given a key to all the species of this genus known at present in Stett. Entom. Zeit., 1928. It is not represented in the material now before me, though Griffini has described *peringueyi* * from the material in the South African Museum, Cape Town.

Subfam. HENICINAE.

Key to the South African Genera of Henicinae.

1. Fore tibiae, besides the apical spines, furnished with 2 spines on upper inner side, unarmed above on outer side.
2. Hind femora heavy, basally scarcely thickened. Mandibles of ♂ not enlarged, shaped as in ♀. Frons and cheeks of ♂ without any processus. Ovipositor extraordinarily short, only 3 mm. long
1. *Bochus* Péringuey.

2′. Ovipositor decidedly longer. Hind femora often thickened basally; if not so, frons or genae of the ♂ furnished with a processus.
3. Hind femora but little thickened basally. In the ♂ the upper part of frons produced into a blunt, obtuse cone, which is—though very slightly—also indicated in ♀ . . 2. *Nasidius* Stål.

3′. Hind femora decidedly thickened basally and attenuated before apex (figs. 18, 22).
4. Frons and cheeks of ♂ without any processus
4. *Onosandridus* Péringuey.

4′. Head of ♂ greatly enlarged, with a processus on either side above base of mandibles . . 6. *Henicus* Gray.

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* The ♀ type of this species, still placed under the genus *Eremus*, is present in the S.A. Museum collections but, having been overlooked, was unfortunately not forwarded to Dr. H. Karny for study.—Editor.

1′. Fore tibiae, besides the apical spines, with but 1 spine on upper inner side, unarmed above on outer side.
2. Hind femora heavy and relatively short, scarcely thickened basally
3. *Faku* Péringuey.
2′. Hind femora longer and stronger, strongly thickened basally, decidedly attenuated distally (figs. 18, 22).
3. Mandibles simple in both sexes. Fore tibiae without a tympanum
5. *Onosandrus* Stål.
3′. Mandibles of ♂ usually strongly enlarged; if not so, a distinct tympanum is present on either side of fore tibiae.
4. Mandibles and labrum of ♂ enlarged. Near base of mandibles an acute processus present in the ♂. Tympana of fore tibiae present or absent. Abdominal tergites smooth, shining.
5. Hind femora rather uniformly coloured, without any or with a not very striking pinnate marking outside; without a pale ring before the knee, the knee itself being usually pale above. The middle inner spur of hind tibiae about as long as or shorter than the metatarsus. The acute processus near the base of ♂ mandibles placed on the fore part of the genae, thus being separated from the mandible by the mandibular articulation
comp. *Henicus* Gray.
5′. Hind knees outside very strikingly pinnate, pale and dark; further with a striking pale ring before the knee, the knee itself being blackish. The middle inner spur of hind tibiae about as long as the first three tarsal joints taken together. The acute processus in the ♂ placed on the mandibular base itself, thus not separated from it by an articulation or a suture
7. *Platysiagon* Brunner v. W.
4′. Labrum of ♂ never, mandibles rarely enlarged; near their base no processus. Fore tibiae always with a well-developed tympanum on either side.
5. Abdominal tergites rugulose-punctulate, strikingly roughened . . 10. *Borborothis* Brunner v. W.
5′. Abdominal tergites smooth.
6. Mandibles simple in both sexes
8. *Libanasa* Walker.
6′. Mandibles of ♂ on median upper side produced into a cylindrical, upcurved processus, broad and thick at the base, sharply pointed at apex, and crossing each other near the tips
9. *Libanasidus* Péringuey.

I have not included in the preceding key the African genus *Dyscapna*, as it is as yet not known from South Africa, being represented by but

one species in Angola (*atra* Brunner v. W.) and one in the Tanganyika Territory (*pulchriventris* Griffini).

Gen. Bochus Péringuey.

Of this genus one species only is known at present, viz. *Bochus puncticeps* (Pictet and Saussure).

1891. Pictet and Saussure, Mitth. Schweiz. Entom. Ges., p. 297, pl. i, figs. 3, 3*a* (*Onosandrus*).

1916. Péringuey, *loc. cit.*, p. 419 (*contemnendus*).

1 ♂ (holotype of *contemnendus*), South Africa, 1875, E. Hughes; 1 ♂ (paratype of *contemnendus*); 1 ♀ (allotype of *contemnendus*), Smithfield, O.F.S., Kannemeyer, September 1910.

I have carefully compared Péringuey's types with the detailed description by Pictet and Saussure, and I find it agrees completely with them in every detail. The differences from the other *Onosandrus* species mentioned by Pictet and Saussure are more than sufficient to justify the erection of a separate genus. Péringuey (*loc. cit.*, p. 422) expressed the opinion that *puncticeps* should be placed with *Onosandridus*; but this is in contradiction with the shape of the hind femora, as may be seen from Pictet and Saussure's figure and from the following statements in the original description: "Pattes postérieures courtes; fémurs peu allongés, sans partie grêle à l'extremité, fort peu renflés à la base."

Gen. Nasidius Stål (Péringuey, *nec* Brunner v. W.).

Key to the Species of Nasidius.

1. Shining black, but the antennae, ocellar spots, palpi, tarsi, and the spines of the legs ferruginous. Frons of ♂ obtusely produced basally near the insertion of the mandibles. Cheeks with dense longitudinal wrinkles. (Occurring in Angola) . . . (Genus ?) *costulatus* Brunner v. W.*

1′. Never shining black throughout. Frons of ♂ with a broad, obtuse, arched or conical elevation, simple in ♀.

2. Fore tibiae with a distinct tympanum on either side. Ovipositor about as long as hind femur . . . *Nasidius longicauda* nov. sp.

2′. Fore tibiae without any tympanum. Ovipositor decidedly shorter than the hind femora.

3. Body and legs ferruginous; face and abdominal dorsum more or less darkened . . . *Nasidius mimus* Péringuey.

3′. Body and legs shining black; head ferruginous with the face darkened . . . . *Nasidius truncatifrons* Stål.

* I cannot decide from Brunner's short description under what genus *costulatus* should be placed, as I have not seen the type specimen. I have therefore included it in the species key of every genus to which it may possibly belong.

Nasidius longicauda nov. sp.

1 ♀ (type), Kaapmuiden, Transvaal, R. W. E. Tucker, 30th October 1918.

Measurements.—Width of head 10·5 mm., length of body 33·5 mm., of pronotum 9 mm., fore femur 9 mm., hind femur 24 mm., hind tibia 21·5 mm., ovipositor 21 mm.

Head castaneous, fastigium verticis somewhat darkened; ocellar dots distinct, yellowish, though very small; antennae dark brown, eyes yellow-grey. Frons, fore part of genae, clypeus, and labrum blackish brown, mandibles reddish brown with shining black chewing margins. Pronotum yellow-grey, diffusely darker greyish, nebulous, especially along fore margin; shining black along the whole hind margin, this band continued along lower margin of lateral lobes, becoming gradually wider and paler forwards, where it suddenly stops before the anterior angle. Posteriorly the whole dorsum bronzy black, but meso- and meta-notum slightly lighter laterally. Ventral surface blackish brown. Coxae yellowish brown, blackish brown, nebulous. Femora dark brown, becoming darker at the knees; tibiae and tarsi nearly black; the spines on the legs dark yellowish brown, blackish at the tips.

Head somewhat wider than pronotum. Fastigium of vertex fully twice as wide as first antennal joint, semicircularly rounded anteriorly, but in the median part continued into fastigium frontis without a distinct boundary. Frons, fore part of cheeks, and upper part of clypeus roughly covered with thimble-like punctures, the punctures becoming gradually smaller and scantier upwards and backwards on the cheeks. Frons rather strongly arched in the middle part, sloping downwards to the clypeus in a broad, obtuse-angulate, triangular area; it may thus be supposed that a frontal cone will be present in the ♂. Clypeus trapezoidal, with a strong median furrow in lower part. Labrum almost circular. Mandibles very strong.

Pronotum semicylindrical, somewhat dilated backwards and there about as wide as long; fore margin very slightly arcuate, hind margin transversely truncate. Disc without a distinct sculpture, with a very feeble, finely impressed median line and an uncertain indication of two transverse sulci running one behind the other in the anterior part; the 7-shaped furrow (of *Gryllacris*) too is indicated by an indistinct oblique impression. Lateral lobes nearly as high as long below; lower margin straight, somewhat descending backwards; anterior angle obtuse-angularly rounded, posterior angle almost rectangularly

rounded ; anterior margin somewhat oblique, posterior margin nearly vertical. V-shaped sulcus and hind oblique furrow feebly indicated, the former far removed from lower margin, transversely truncate below ; the hind oblique sulcus is also situated relatively far forwards. Prosternum quite unarmed. Mesosternal lobes almost rectangularly triangular, but more acuminate at apex. Metasternal lobes almost square, transversely truncate at the end, more rounded at the outer than at the inner angle.

Fore and middle coxae with a rather short, but strong and acutely pointed spinelet. All femora strongly compressed, unarmed ; the hind ones somewhat more thickened than in the allied species, but much less than in *Henicus* or *Onosandrus*, etc. All genicular lobes rounded, unarmed. Fore tibiae with a distinct tympanum on either side, unarmed above on outer side (excluding apical spines), with 2 spines on the inner side, the second of them being placed at about the middle. Middle tibiae above on outer side (=in front) with 2, on inner side with 3 spines (excluding apical spines). Hind tibiae straight, above on the outer side with 7, on the inner side with 8 spines which are about half as long as the tibia is thick, but the last one much smaller and situated just before the upper apical spur ; below on either side with the usual preapical spinelet before the lower apical spur, besides these with but 1 spinelet on inner side at about the middle, on the outer side with 3 spinelets from the middle to the apex. Middle inner spur strong, as long as the metatarsus, the upper one a very little longer, the undermost more than half as long as the middle ; upper and middle outer spurs hardly longer than the inner undermost, the lower outer spur shorter by about one-fourth.

Ovipositor long and slender, a little shorter than the hind femur, slightly upcurved, valvulae with complete margins, the upper ones decidedly longer than the lower ones, apex rather acute. ♀ subgenital plate with the shape of an obtuse-angled triangle, obtuse-angularly excised at the end, fully twice as wide at base as long.

The general appearance, size, and especially the coloration of pronotum reminds one very much of *Faku minotaurus*, but it is easily distinguishable from it by the darker head, the much longer ovipositor, and by the fore tibiae being two-spined above. By this latter character, the species comes under *Nasidius*, but cannot be mistaken for any of the other known species of this genus. The fact that *longicauda* possesses tympana on the fore tibiae is very remarkable, and gives to this species an exceptional systematic position, though it is not sufficient, I think, to separate it generically.

Nasidius truncatifrons Stål (nec Brunner v. W.).

Syn.: *monachus* Péringuey, *loc. cit.*, p. 417.

1 ♂ (type of *monachus*), between Zambesi and Limpopo, T. Ayres.

Apart from the smaller size, which I cannot consider as important (compare with *Henicus prodigiosus* and *Libanasidus vittatus*), the specimen before me agrees completely in all details with Stål's description of *truncatifrons*. Péringuey, when he stated that *truncatifrons* differs from his new species by having but one median spine above on fore tibiae, overlooked the fact that this is true only for *truncatifrons* Brunner v. W., whilst Stål expressly states for his species that it has 2 spines on the upper inner margin of fore tibiae (excl. apical spines). Brunner's species is, in my opinion, different from that of Stål, for (apart from the number of spines) the frontal cone is, according to the figure by Brunner, much more slender and acute (compare fig. 11 here with that given by Brunner), and the coloration is described by Brunner simply as "picea" without mentioning the striking difference between occiput and dorsum of body, which he could not have overlooked. I propose therefore a new name for Brunner's species and have placed it provisionally in the genus *Faku* (see *Faku brunneri*).

Fig. 11.—*Nasidius truncatifrons* (type of *monachus*), dorsal view, natural size. (Del. Goesti Abdoelkadir.)

Péringuey seems to consider *mimus* as more closely allied with *truncatifrons* than *monachus*. Although the type locality of *mimus* would suit *truncatifrons* better than *monachus*, I must nevertheless identify the latter species with *truncatifrons* on account of their agreement in coloration. Moreover, the head is considerably broader in the ♂ of *mimus*, and Stål expressly states "caput . . . pronoto vix latius," a condition which agrees also with *monachus* and not with *mimus*.

I have few additions to make to the published descriptions: All genicular lobes unarmed. Middle tibiae with 2 reddish-brown spines above on outer side (=in front), 3 on inner side, below 4 such on either side (everywhere excluding apical spines). Hind tibiae with 8 shining black, brownish-tipped spines above on the inner side, 7 such on the outer side; below on either side with 1 brownish spinelet in the

middle, and, besides these, 2 in the distal half on the outer side ; further, the usual preapical spines just before the lower apical spurs. All apical spurs of hind tibiae blackish basally, brownish distally. The upper inner one scarcely as long as the metatarsus, the middle one a very little shorter, the undermost hardly two-thirds as long as the middle one. The upper outer spur about as long as the lower inner, the middle one a little shorter, the undermost somewhat shorter still.

Cerci well developed. Anal valves (appendices cerciferae) with a short, cylindrical, slender process directed upwards inside, the two crossing each other, almost completely covered by the subgenital plate. This latter large, hexagonal, somewhat broader at base than at the end, broadest a little before the middle, truncated squarely at apex, bearing at either angle of this apical margin a rather well-developed cylindrical style.

Nasidius mimus Péringuey (*loc. cit.*, p. 416).

1 ♂ (type), Transkei, Dr. Kolbe, 1896 ; 1 ♀ (allotype), Kentani, H. P. Abernethy, 1907 ; 1 ♀ (det. Péringuey), Transkei, Kentani, 1899.

Easily distinguishable from the preceding species by the coloration and by the much broader head of ♂. Armature of legs as in that species, but there may be present exceptionally (♂ right leg) 8 spines above on the outer side of hind tibia. The spines of lower side of hind tibiae relatively longer than in *truncatifrons* ; on the other hand, on the outer side, with the exclusion of preapical spines, there are always present 2 spines instead of 3. Apical spurs ferruginous, only blackish at the tips ; their relative lengths as in *truncatifrons*, but the middle one of both sides not shorter, rather a little longer than the uppermost.

♂ sexual characters as in the preceding species, but the processes of anal valves longer, straight, horn-like, not crossing each other. ♂ subgenital plate slightly bisinuate at the end. Ovipositor very similar to that of the *ferox* type. ♀ subgenital plate rectangular in shape, slightly triangularly emarginate at apex, in the middle of its surface with a shallow triangular impression.

Gen. Faku Péringuey.

Key to the Species of Faku.

1. Occiput at least, or occiput and pronotum, yellowish.
   2. Body shining black above, occiput only yellowish ivory to pale ferruginous. ♀ subgenital plate small, trapezoidal, about as long as wide, slightly emarginate at apex . . . . *Faku dregii* (Burmeister).

2′. Occiput brownish yellow, pronotum yellowish grey, at most dilutely darkened along margins. Meso- and meta-notum and the abdominal tergites shining black, often somewhat greyish at their bases. ♀ subgenital plate obtuse-angularly triangular, much wider than long, with an obtuse-angled excision at apex *Faku minotaurus* nov. sp.

1′. Occiput dark, of a similar colour to rest of body on dorsum.

2. Pitchy coloured to shining black.

3. Frons above with a conical processus in the ♂.*

4. General colour pitchy brown. Frontal processus of ♂ * rather slender, directed forwards and upwards, conical *Faku brunneri* nov. sp.

4′. Bronzy black above, but the pronotum with a large, more or less distinct yellow spot on either side. Occiput dark brown, frons deep black. Frontal processus of ♂ very short, obtuse, and broad . *Faku nigrifrons* nov. sp.

3′. Frons of ♂ * without a median processus, bluntly produced basally near the base of mandibles. (Occurring in Angola.) (Genus ?) *costulatus* Brunner.†

2′. Fuscous bronze sprinkled with pale flavescent *Faku minax* Péringuey.

Faku dregii (Burmeister).

1927. Karny, Zeitschr. f. Naturwiss., lxxxviii, 1/2, p. 10 (*Mimnermus*).

The original description of this species given by Burmeister (Handb. Entom., ii, p. 721, 1838) runs as follows : " niger, nitidus, pedibus caesiis ; capite ovato flavo, integro ; clypeo labioque utrinque nigro. Long. corp. 1″–1½″. Vom Vorgebirge der guten Hoffnung."

Since that time the species has not been redescribed, and it has also not been incorporated in Brunner's monograph. In 1927 I restudied Burmeister's type specimens, and added a few further remarks to his short description, but on that occasion I had very little time and space at my disposal to give a more detailed redescription of this species.

The measurements of Burmeister's types are :

	Width of head.	Length of body.	Mandib.	Pron.	Fore fem.	Hind fem.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	10·1	39·0	6·0	7·6	8·0	19·3	..
♀	12·5	47·0	8·0	9·6	10·7	23·2	8·5

* The ♀ of *costulatus* is not yet known. Under *brunneri*, Brunner has placed a ♀ he described, but it is not quite certain whether it belongs in fact to this species.

† See the footnote to the species key of *Nasidius* above (p. 96).

At present I have before me the following material from which I now give a more detailed redescription of the species :—

2 ♂♂ (Brit. Mus., London), South Africa, C. G. Barrett, 1903–11; 1 ♀ (Mus., Cape Town), East London, May 1912, Loundale. Their measurements are :

	Width of head.	Length of body.	Mandib.	Pron.	Fore fem.	Hind fem.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	11·5	37·3	7·7	7·1	8·5	20·5	..
♂	11·0	±32·0	8·0	6·5	8·7	18·5	..
♀	9·3	32·8	6·0	8·2	9·6	21·6	7·5

Body deep black, with a strong metallic lustre, somewhat less intensively coloured in ♀; legs paler, grey. Head rather uniformly brownish yellow in ♀; in the ♂, occiput ivory yellow passing into castaneous downwards on frons. Face of ♂ dark castaneous brown to blackish brown, the lower part of genae straight on shining black; mandibles red-brown, black at the end; clypeus in the one ♂ ivory white, in the other blackish, but with a narrow whitish margin all round.

Fastigium verticis in ♀ hardly, in ♂ decidedly more than twice, as wide as first antennal joint (fig. 12); in ♀ concolorous, whilst pale greyish in the ♂; from its upper end, three longitudinal rows of very fine impressed punctures running on till the hind margin of occiput in the ♂, not distinguishable with certainty in ♀. Ocellar spots very small but distinct, brownish yellow. Structure of frons as in *minax*. Lateral region of frons and the greater part of cheeks furnished with strong wrinkles and raised ribs in the ♂, these being hardly visible even under the magnifying lens in ♀. Clypeus trapezoidal, much longer in ♂ than in ♀. Labrum almost circular. Mandibles of ♀ normal, fitting close to clypeus and labrum without any gap; in the ♂ elongate and very strongly curved, so that there remains a rather large gap between them and the clypeus. Labrum covering the apices of mandibles in the one ♂, whilst situated behind them in the other (as described already by Stål for *Nasidius*).

Pronotum relatively short, wider than long, decidedly dilated forwards in the ♂. Fore and hind margin transversely truncate. Besides the ascending branch of V-sulcus, which has the same situation as in *minax*, there are no other sulci distinguishable with certainty.

Lateral lobes hardly longer than high, similar in shape to those of *minax*. Prosternum unarmed. Mesosternal lobes acute-angulate, metasternal lobes obtuse-angulate (in *minax* apparently also of the same shape).

All femora unarmed, the hindermost slightly dilated basally, though much heavier and less strong and less attenuated distally than in *Onosandrus* or *Libanasa*. All genicular lobes rounded, spineless. Fore tibiae without any tympanum at all. Armature of tibiae as in *minax*, but one of the hind tibiae before me has 9 spines on the inner side above instead of 8. Apical spurs of hind tibiae more slender and relatively longer than in *minax* ; the uppermost inside one fully as long

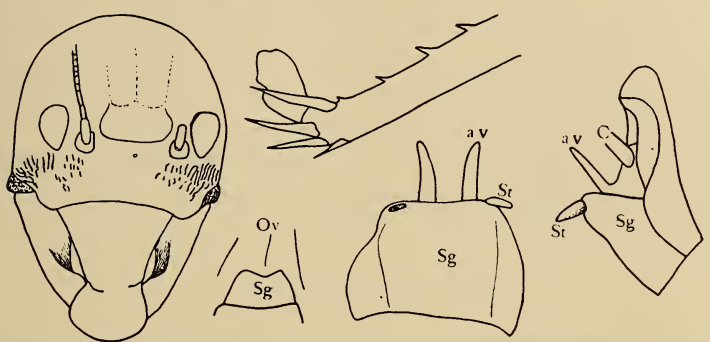

Fig. 12.—*Faku dregii*. Left : Head of ♂, frontal view. Middle above : ♂, end of hind tibia, seen from inside. Middle below : ♀ and ♂ subgenital plate. Right : end of ♂ abdomen in lateral view. The head less magnified than the other figures.

as metatarsus, the second one quite as long or even a very little longer, the third (=undermost) about two-thirds as long, the fourth (=pre-apical spine) much shorter and weaker ; the outer two upper ones about equal in length, a little more than half as long as the inner ones, the third a little shorter, the fourth as inside one.

♂ subgenital plate large, trapezoidal, lateral parts obliquely ascending and separated from middle part by a very sharp longitudinal keel (fig. 12), middle part with the apical margin quite straight, transversely truncate, bearing a short, thick style on either lateral angle. Anal valves (=appendices cerciferae) transverse, extended mesad upwards into a long, cylindrical, almost straight, horn-like processus. Cerci but a little longer than this processus.

♀ subgenital plate very small, trapezoidal, about as long as wide at the tip, apical margin slightly emarginate, with a blunt rounded angle on either side. Ovipositor very weak and short, strongly directed

upwards even from the base, and also slightly upcurved for its whole length, with integer valves, blunt at apex.

Easily distinguishable from *minax* by the coloration alone ; further, by the shape of ♂ mouth parts, by the wider fastigium of vertex, by the relative lengths of apical spines of hind tibiae, and, finally, by the structure of ♂ sexual characters. Differing from *brunneri* at a glance by the absence of ♂ frontal processus. I have already stated in 1927 that in my opinion *dregii* may perhaps be identical with *costulatus*. I have, however, not yet seen true specimens of *costulatus*, and thus know the species only from the very short description given by Brunner. From this I find that the only difference is in the coloration of the head, which is evidently not sufficient for a specific separation. On the other hand, Brunner's description is so laconic that not even the generic position of his species can be inferred from it with certainty. At all events, it is possible that the South African *dregii* may be represented in Angola by a similar, closely allied species, or by a local race somewhat different in coloration, which would then be *costulatus*. It seems impossible to decide these questions without having seen Brunner's type specimen (Mus., Stettin).

Faku minotaurus nov. sp.

1 ♂ (holotype), East London, Lightfoot, October 1912 ; 1 ♂ (paratype), Transkei, Kentani, Dr. Kolbe ; 1 ♂ (paratype), Natal, Umvoti, H. Fry ; 1 ♀ (allotype), East London, Lightfoot, November 1915.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂ E.L.	13·2	44·0	9·5	10·7	23·5	20·0	..
♂ Tr.	12·5	33·5	8·7	9·5	22·8	20·4	..
♂ Nat.	10·5	31·7	7·7	8·7	19·8	16·7	..
♀	9·5	34·3	9·0	9·5	22·3	19·7	10·4

Occiput pale brownish yellow, laterally towards the genae gradually becoming red-brown. Face dark castaneous brown to blackish ; mandibles sometimes paler, red-brown. Pronotum pale, greyish yellow, diffusely darker nebulous along margins, usually narrowly blackish, especially along hind margin. All following tergites bronzy black, but meso- and meta-notum yellow-grey in basal part, some of the

following tergites also somewhat paler basally. Under-surface of body yellow-brown to blackish. Legs yellow-brown to dark grey, tibiae darker than the femora.

Head wider than pronotum. Fastigium of vertex twice as wide as first antennal joint, slightly excavate on surface and with impressed punctures. Ocellar dots very small, dark yellow. Frons with a distinct, thick median elevation in ♂; in ♀ only arched, without a tubercle, though also obliquely descending against the clypeus in the shape of a very blunt, obtuse-angled triangle. Frons coarsely impresso-punctate, the punctuation becoming scantier and finer on clypeus and labrum; fore part of cheeks coarsely and irregularly wrinkled. Clypeus trapezoidal, usually longer and relatively narrower in ♂ than in ♀, in the ♂ from Natal shaped as in ♀. Mandibles of ♂ strongly curved, not closely fitting to clypeus and labrum but enclosing with them a distinct, though not very broad, free gaping space, at the apex covering and embracing the labrum in front in the ♂ type; in the two other specimens covered by the labrum.

Pronotum a little wider than long, slightly dilated forwards. Disc with a very fine median sulcus and three to four broad, very shallow, but slightly indicated cross-sulci, and with a feeble oblique impression at the site of the anterior end of 7-shaped sulcus. Lateral lobes a little longer than high, with almost straight, very slightly convex lower margin, the fore and hind angle being roundedly obtuse-angulate. The ascending branch of V-sulcus distinct, the descending branch slightly indicated; oblique hind sulcus usually not distinguishable at all. The soft-skinned throat bearing four shallow, circular, somewhat darker brown elevations, the two posterior ones somewhat larger and somewhat wider apart from each other than the two anterior ones. Prosternum with two acutely triangular points. Mesosternal lobes triangular, acutely pointed. Metasternal lobes inside more shallowly, outside more steeply obliquely truncate, with a rounded obtuse angle between them.

Fore and middle coxae each with a very short, triangular spinelet. Legs as in *dregii*; but the hind tibiae above always bear 8 spines on the outer side in the ♂, the last of them being, of course, very small; in ♀ only 7; on the inner side usually 8, though the number may increase to 10 or 11; the spines being decidedly less than half as long as the tibia is thick. Apical spurs of hind tibiae also as in *dregii*, but the middle inner spur may be a very little shorter than the uppermost; in the ♂ from Natal it is normal on the right hind tibia only, whilst on the left it is very short, decidedly shorter than the lower one, very

thin in distal half and with a very acute tip (evidently an abnormality, perhaps regeneration). A similar abnormality may be seen on left hind tibia of type-♂ in which the middle outer spur is very thick indeed, but quite short, almost tubercle-like, nevertheless with a distinct, blackish point; on the right hind tibia of the same specimen it is quite absent (perhaps broken).

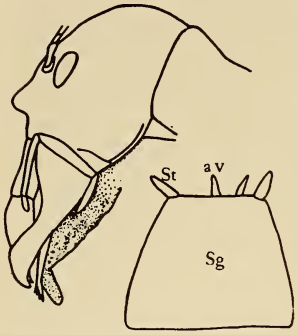

FIG. 13.—*Faku minotaurus*, ♂. Head in lateral view, and subgenital plate. Same magnifications as in fig. 12 (head less magnified than subgenital plate).

♂ sexual characters (fig. 13) similar to those of *dregii*. Ovipositor very broad in basal half and strongly upcurved, whilst narrow and rather straight in distal half, at the tip obliquely truncate from below. Valves complete, the lower ones decidedly shorter than the upper (compare fig. 14). ♀ subgenital plate similar to that of *nigrifrons*, of the shape of an obtuse-angled triangle, obtuse-angularly excised at apex, twice as wide at base as long.

Without doubt closely allied to *dregii*, differing from it in both sexes by the much paler, yellowish-grey pronotum; in ♂, moreover, by the presence of a frontal elevation and by the decidedly narrower fastigium verticis; in ♀ by the different shape of subgenital plate and ovipositor.

Faku brunneri nov. sp.

Syn.: *Nasidius truncatifrons* Brunner v. W., 1888, nec Stål 1876.

This species differs from the true *Nasidius* spp., not only by the number of fore tibial spines, but also by the ♂ frontal cone being (according to Brunner's figure) much slenderer and directed more upwards.

I place in this species, though with some doubt, 1 ♀ from Albany Dist.?, C.P., January 1891, Mrs. G. White.

Measurements.—Width of head 10·5 mm., length of body 35 mm., of pronotum 8·5 mm., fore femora 9·5 mm., hind femora 20·5 mm., hind tibiae 18·7 mm., ovipositor 9·4 mm.

In all structural characters agreeing very well with Brunner's statements. Upper surface of body (including occiput) dark brown, rather shining, going over into ferruginous laterally (including cheeks). Antennae uniformly ferruginous brown, but the first joint darker. Fastigium verticis, frons, and upper part of clypeus greyish black,

lower ocellar spot and a median spot between frons and clypeus ferruginous yellow, with the lower part of clypeus and the mandibles also of the same colour. Labrum darker again. Abdominal sternites dark brown, but on each sternite the hind margin and a rounded spot on either side ferruginous yellow. Ovipositor ferruginous brown. Femora dark ferruginous brown, all knees broadly shining black. All tibiae ferruginous brown below throughout their whole length, shining black above, but with a ferruginous ring below the knee, and all spines and spurs ferruginous yellow, blackish only at the tips.

Anterior part of genae and upper part of clypeus as strongly wrinkled as the frons. Femora and genicular lobes unarmed. Middle tibiae, besides the apical spines, with 2 spines above on the outer side and 3 on the inner side. Hind tibiae above on the outer side with 7, on the inner side with 8 spines, the last of them being very small and placed just before the upper apical spur ; the others hardly half as long as the tibia is thick. Below 2 spinelets in distal part on the outer side, 1 on the inner side slightly beyond the middle, further on the usual preapical spines. Upper inner spur a very little longer than the middle one, almost as long as the metatarsus, the undermost about half as long. Outer spurs about two-thirds as long as the inner ones respectively, the undermost even slightly more. ♀ subgenital plate trapezoidal, more strongly narrowed distally, arcuately emarginate at apex. Preceding sternite with the hind margin slightly and uniformly convex, without any keels or depressions on surface.

Faku nigrifrons nov. sp.

1 ♂ (holotype), Mt. Frere, Transkei, Dr. S. L. du Toit ; 1 ♀ (allotype), Brakkloof Farm, November 1897, Mrs. G. White, Albany Museum, Graham's Town.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	11·2	26·8	6·4	9·0	18·2	15·0	..
♀	10·6	36·0	8·2	10·3	19·7	18·0	9·5

General colour bronzy black, sprinkled with orange yellow in ♀ laterally and below. Occiput very dark brown, upper and posterior part of genae lighter brown. Eyes grey. Antennae dark brown.

Fastigium of vertex, frons, and lower anterior part of cheeks blackish. Clypeus becoming somewhat paler downwards, labrum darker again distally. Mandibles red-brown, blackish at the tip. Pronotum bronzy black ; in ♀ there is present a large orange-yellow spot around the ascending branch of the V-sulcus, passing backwards below into several somewhat irregular smaller spots, and above emitting forwards a sharp point on disc, joined to the opposite one by two small transverse orange-yellow spots close before the middle of pronotum ; just before hind margin another orange-yellow transverse median spot on disc. All these colorations are present in the ♂ too, but darker and much less well defined, so that they may be easily overlooked. Femora

Fig. 14.—*Faku nigrifrons.* Left : Head of ♂ in lateral view. Middle : ♂ subgenital plate. Right above : Ovipositor. Right below : ♀ subgenital plate. Same magnifications as in fig. 12 (head less than the others).

yellow-brown, with blackish reticulation, gradually darkened above and towards the knees. Tibiae and tarsi almost black. Spines of legs brown with dark tips. Ovipositor yellow-brown at base, becoming darker distally, but abruptly yellow-brown again before the tip.

Head in ♀ slightly, in ♂ decidedly wider than pronotum. Occiput strongly arched, especially in the ♂. Fastigium of vertex twice as wide as the first antennal joint, below arcuately rounded, surface excavate and impresso-punctate. Three dark yellow ocellar dots rather distinct. Fastigium frontis arched in ♀, whilst in the ♂ prominent downwards and thus passing over into a blunt, conical elevation, the tip of which is situated at about the middle of the frons ; from here downwards the surface of frons slopes suddenly and strongly again towards the clypeus. Frons, clypeus, and labrum impresso-punctate, sides of frons and lower anterior part of cheeks even costulate, especially strongly so in the ♂ ; in ♀ these costules are also

distinguishable, but much weaker. Mandibles of ♂ very strongly arcuate, enclosing with clypeus and labrum a large, almost semicircular gap (fig. 14); in ♀ slightly arcuate, but also not fitting close to clypeus and labrum, leaving between them a distinct though narrow space.

Pronotum somewhat wider than long in dorsal view, with well-indicated 7-shaped sulcus; moreover, with a broad valliform cross-sulcus behind fore margin in the ♂. Lateral lobes longer than high, with lower margin slightly rounded, almost straight, and with fore and hind angle roundedly obtuse-angulate. Ascending branch of V-sulcus strongly impressed. Prosternum with two flat, downwardly prominent lobes which are transversely truncate in ♂, acutely pointed in ♀. Mesosternal lobes broad, with a rather sharp, outwardly and backwardly directed point at apex. Metasternal lobes transversely truncate, with obtuse-angulate outer angle.

Fore and middle coxae with a short, acutely pointed spine. All femora compressed, unarmed. All genicular lobes rounded, spineless. Fore tibiae without tympana, above on the inner side with only 1 spine in the middle. Middle tibiae (besides the apical spines) above on the outer side with 2, on the inner side with 3 spines. Hind tibiae straight in both sexes, above on the outer side with 6 to 7, on the inner side with 8 short but sharply pointed spines, the last of them being much reduced, placed close before the upper apical spur. The other spines decidedly less than half as long as the tibia is thick. Below, besides the preapical spines, are 2 in distal half on the outer side, nearly as long as the upper ones, and with but a single one on the inner side at about the middle, decidedly shorter and weaker than the outer ones. Upper and middle inner spur about equally long, somewhat shorter than metatarsus; lower one about two-thirds as long as the middle spur. Upper and middle outer spur about as long as the inner undermost; lower outer one even somewhat shorter.

♂ subgenital plate large, trapezoidal, with well-developed styles; between them the hind margin is distinctly convex, but slightly emarginate in the middle (fig. 14). The horn-like processes of anal valves almost parallel, cylindrical, bluntly pointed at apex. ♀ subgenital plate and ovipositor practically as in *minotaurus* (fig. 14).

Without doubt this new species is very near to *minotaurus*, differing from it especially by the coloration of head and pronotum; in the ♂, moreover, by the mandibles being decidedly more arcuate, by the somewhat differently shaped frontal processus, and by the shape of the subgenital plate.

Faku minax Péringuey (*loc. cit.*, p. 419).

1 ♂ (type), Cape Colony, Dunbrody, J. A. O'Niel, 1901.

I can complete Péringuey's description by the following additions :—

Fastigium of vertex hardly twice as wide as first antennal joint, bluntly keeled laterally, rounded below. The two upper ocellar spots small, circular, pale, well defined, the undermost just as small, but much less distinct. The elevation on the frons (the " clypeus " of Péringuey) is very blunt and slight, defined on either side by a not very strongly marked, though distinct, subantennal pit, becoming gradually more shallow downwards and finally ceasing altogether. Frons obliquely truncate downwards towards the clypeus in the shape

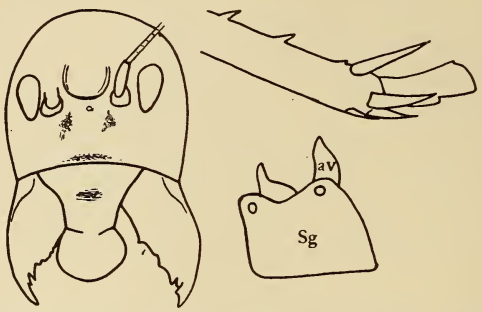

Fig. 15.—*Faku minax*, ♂. Left: Head in frontal view. Right above: End of hind tibia from inside. Right below: Subgenital plate. Same magnifications as in fig. 12 (head less magnified than the other figures).

of a broad, low triangle which is transversely slightly rugulose (" striolate," Péringuey). Mandibles short and broad, very heavy, in the unique type specimen widely separated (by preparation). In the normal position I suppose they will no doubt fit close to the clypeus and labrum without any free space between them.

Pronotum 7·7 mm. long, with fore and hind margins very slightly rounded, almost transversely truncate ; fore and hind cross sulci broad and very shallow, separated from fore and hind margins respectively by about one-sixth to one-fifth of pronotal length. Lateral lobes longer than high, with very slightly rounded lower margin, somewhat obliquely ascending fore and hind margin ; fore and hind angle bluntly obtuse-angulate. Ascending branch of V-sulcus situated about in the middle of lateral lobes, strongly and deeply impressed ; no other sculpture distinguishable with certainty.

All femora unarmed; the hindermost a little more thickened basally than in *Bochus*, but the difference is not striking, and they certainly belong to the heavy type with only slight distal attenuation, quite different from *Onosandrus*, *Libanasa*, etc. All genicular lobes rounded, unspined. Fore tibiae without tympana at all; besides the apical spines, with but a single spine at the middle above on the inner side, below with 4 such on either side. Middle tibiae (excluding apical spines) with 2 spines on upper outer, with 3 on upper inner side, with 4 below on either side. Hind tibiae below with a very small spinelet at the middle on the inner side, with 2 such in distal half on the outer side; with 8 spines above on the inner side and 7 on the outer side somewhat larger than those below, decidedly shorter, however, than in the other allied species; the last of them, situated on either side just before the upper apical spur, is much smaller and weaker than the others. Besides the usual preapical spines on lower side, there are further 3 apical spurs on either side, the upper ones distant from the others; the inner uppermost the longest of all, but still not quite as long as the short, heavy metatarsus; the middle one somewhat shorter, and the lower one somewhat shorter again (fig. 15). Outer upper spur about two-thirds as long as the outer inner one; the middle and the undermost somewhat shorter, about equal in length to each other.

♂ subgenital plate roughly quadrate but somewhat narrowed distally, emarginate at apex. Styles not present in the specimen before me, though the places of insertion are easily distinguishable.

Without doubt a peculiar species, which was quite entitled to be separated generically from all the formerly known species. It is also very different from all the other species I have now provisionally placed in the genus *Faku*, differing especially by the shape of head and of ♂ mandibles. It is not impossible therefore that the genus *Faku*, as I have defined it here, may be a heterogenous one, and perhaps in the future will have to be restricted to *minax* only. Nevertheless, I wish to avoid the erection of a new generic name for the other species placed here under *Faku*, at any rate until their relations based on richer material have been definitely cleared up.

Gen. Onosandridus Péringuey.

Key to the Species of Onosandridus *and* Henicus.

1. Shining black, but the antennae, ocellar spots, palpi, tarsi, and spines on legs ferruginous. Frons (♂) bluntly produced basally near the insertion of

mandibles. Cheeks with dense longitudinal wrinkles. (Occurring in Angola) . . . . . (Genus ?) *costulatus* Brunner v. W.*

1′. Never shining black throughout, at least part of occiput or pronotum decidedly paler, yellow-brown or red-brown.

2. Legs dark brown to blackish.

3. Fore tibiae above on the inner side with but 1 spine besides the apical spurs, often with a distinct tympanum on either side. Body above strongly shining like varnish, abdomen shining black. Anterior part of genae above the base of mandibles in ♂ with a long, slender, horn-like processus reaching decidedly beyond the middle of labrum. Ovipositor almost as long as hind femora . . . . *Henicus pattersonii* (Stoll).

3′. Fore tibiae above on the inner side with 2 spines besides the apical ones, always without tympana. Body rather faintly shining.

4. Frons and cheeks rather light grey; labrum grey. Mandibles ochreous yellow. Ovipositor upcurved, about two-thirds as long as hind femora. ♀ subgenital plate small, trapezoidal, shallowly emarginate at apex
Onosandridus simplex nov. sp.

4′. Face fairly uniform brown. Ovipositor decidedly longer or shorter than in the preceding species. ♂ unknown.

5. Spines of hind tibiae fully as long as the tibia is thick. Ovipositor by one-sixth shorter than hind femur. ♀ subgenital plate trapezoidal, transversely truncate or even slightly emarginate at apex
Onosandridus deceptor Péringuey.

5′. Spines of hind tibiae decidedly shorter than the tibia is thick. Ovipositor hardly more than half as long as hind femora. ♀ subgenital plate semicircular (fig. 16) . *Onosandridus plebeius* Péringuey.

2′. Legs entirely or for the greater part brownish yellow or pale ferruginous.

3. Frons laterally and fastigium verticis dark reddish brown or black. Middle of frons with a distinct pale yellow vertical band or at least with a pale yellow lower ocellar spot. Cheeks pale yellow.

4. Frons entirely black, only the pale yellow ocellar spot distinct, well defined. Middle tibiae above, besides the apical spurs, with 3 spines on either side
Onosandridus larvatus nov. sp.

4′. Frons from upper end of fastigium frontis to the similarly coloured pale yellow clypeus with a well-defined bright yellow median band, on either side thereof pitchy black. Middle tibiae, besides the apical spurs, above with 2 spines on the outer side and 3 on the inner side
Henicus pictifrons (Péringuey).

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* Compare footnote to the species key of *Nasidius* above (p. 96).

3′. Frons fairly uniform brownish yellow to darker brown.

4. Castaneous brown. Thoracic tergites on either side with a sharp yellow band of spots. Fore part of genae in the ♂ with a short, broad processus, which is hardly longer than first antennal joint. ♀ unknown. (Occurring in Angola) . . . *Henicus cephalotes* (Bolivar).

4′. At least the head paler, brownish yellow to pale ferruginous. Thorax laterally without a well-defined band of spots.

5. Middle inner apical spur of hind tibiae twice as long as the uppermost *Onosandridus calcaratus* nov. sp.

5′. Middle inner apical spur of hind tibiae shorter or hardly longer than the uppermost.

6. Fore part of cheeks in the ♂ above base of mandibles with an acutely triangular, outwardly directed processus (fig. 19). Ovipositor hardly one-third as long as hind femur *Henicus prodigiosus* (Stål).

6′. Anterior part of genae in the ♂ above base of mandibles with a cylindrical, forwardly directed processus (fig. 21). Ovipositor about as long as hind femora.

7. Middle tibiae above, besides the apical spurs, with 2 spines on the outer side and 3 on the inner side. Hind tibiae somewhat less strongly thickened basally.—♂: Head hardly twice as wide as pronotum. Mandibles uniformly and slightly curved.—♀: Lateral lobes of pronotum about twice as long as high, with slightly rounded lower margin. Subgenital plate (fig. 20) broad, rounded at apex. Ovipositor somewhat shorter *Henicus brevimucronatus* Griffini.

7′. Middle tibiae above, besides the apical spurs, with 3 spines on either side. Hind femora somewhat more thickened basally.—♂ (fig. 21): Head more than three times as wide as pronotum. Mandibles at the end of basal fourth and at beginning of apical fourth obtuse-angularly curved inwards.—♀: Lateral lobes of pronotum but little longer than high, with strongly rounded lower margin. Subgenital plate (fig. 22) shaped as an equilateral triangle, but obtuse-angularly truncate at the apex. Ovipositor somewhat longer *Henicus monstrosus* (Herbst.).

Onosandridus simplex nov. sp.

1 ♀ (holotype), 1 ♂ ?? (with damaged abdomen and but one middle femur and one hind leg, no fore legs), both from S.E. Tropical Africa, Manica, Coope, 1894.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♀	7·3	27·5	±6·0	7·2	16·5	14·0	10·5
♂ ??	7·7	28·0	5·8	?	16·7	14·2	..

Body very dark brown above, rather shining, uniformly coloured, but the occiput paler brown, fastigium of vertex darker brown again. Antennae uniformly dark brown. Cheeks and frons rather pale grey, fastigium frontis with a small, circular, dark yellow ocellar spot, well defined in ♂ ??, less distinct in ♀. Clypeus on upper part of the same colour as the front, then with an ill-defined darker cross-band, pale ferruginous yellow below. Mandibles—so far as they are not covered by the labrum—ochreous yellow. Labrum grey, darker than the mandibles. Legs paler than body, brown, paler than in *deceptor* and *plebeius*, but decidedly darker than in *pictifrons* and most of the other *Henicus* species. Ventrally brown, in the ♂ ?? almost as dark as above, in ♀ decidedly paler. Ovipositor yellow-brown.

Head not or hardly wider than pronotum. Fastigium verticis rounded, twice as wide as first antennal joint. Cheeks shining, with a few shallow, parallel, oblique impressions, hind margin with a linear prominence, but not enlarged. Mouth parts quite normal, without any enlargements or processes. Pronotum relatively small, wider than long in dorsal view, with a very slightly curved fore margin and transversely truncate hind margin. On the disc a relatively slender, finely impressed median line, and with the indication of two shallow cross-sulci, the hindermost of which is nearer to the hind margin than the anterior one is to the fore margin; fore sulcus curved, with the convexity directed backwards. Lateral lobes somewhat longer than high, fore and hind margins somewhat converging downwards, lower margin slightly curved, fore and hind angle rounded. The ascending branch of V-sulcus distinct, situated about in the middle of lateral lobes, the descending branch quite as far from fore margin as

from hind branch ; lower angle rounded, as far from the lower margin as the fore branch is from the fore margin. Hind oblique sulcus absent, but in this region there is present a small, rounded, decidedly impressed dimple. Fore and middle coxae with a distinct, short spine. Prosternum produced into two processes which are directed obliquely backwards and downwards, nearly lamellate, with the shape of an obtuse-angled triangle, but sharply pointed at tip. Mesosternal lobes of a similar shape, but larger and thicker, more massive, not lamellate. Metasternal lobes broad, slightly arcuate at the end, almost transversely truncate.

All femora unarmed, the hindermost strongly thickened basally, decidedly attenuate distally. All genicular lobes rounded, unarmed. Fore tibiae absolutely without tympana, unarmed above on the outer side, on the inner side with 2 spines besides the apical ones ; below with 4 spines on either side and the usual apical spines. Middle tibiae with 2 spines above on the outer side, 3 on the inner side, excluding the apical spurs, below as in the fore tibiae. Hind tibiae above on the inner side with 8, on the outer side with 7 spines, the last of them situated just before the upper apical spur and very small ; the others nearly as long as the tibia is thick ; below on the outer side in distal half with 3 spines and the usual preapical spinelet, on the inner side besides the latter unarmed. Upper and middle inner spur about equal in length, as long as the metatarsus, the undermost somewhat more than half as long. Upper and middle outer spur hardly longer than the lower inner one, lower outer spur somewhat shorter than the inner.

Ovipositor in length and shape between *deceptor* and *plebeius*. ♀ subgenital plate small, trapezoidal, slightly arcuately emarginate at the end. I do not know whether the other specimen is in fact a ♂, because the apical part of the abdomen is damaged.

Onosandridus deceptor Péringuey (*loc. cit.*, p. 422).

1 ♀ (type), S. Rhodesia, Umtali, Bodong, 1903.

Head brown. All genicular lobes spineless. Hind tibiae dark brown, spines of the same colour, otherwise as in *Henicus pictifrons*. Apical spurs of hind tibiae also as in that species. By the expression " styles long," Péringuey means the cerci. Ovipositor uniformly slightly upcurved, valves with complete margins, the lower ones decidedly shorter than the upper, apex bluntly pointed. ♀ subgenital plate of the shape of an equilateral triangle, slightly emarginate at the apex. Preceding sternite with a shallow median impression.

Onosandridus plebeius Péringuey (*loc. cit.*, p. 423).

1 ♀ (type), Transvaal, Hughes, 1878.

Hind femora very strongly thickened basally, unspined. Genicular lobes spineless. Hind tibiae very slightly curved in distal part, with 7 spines above on either side, the last of which is smaller than the others and situated just before upper apical spur. Middle inner spur of hind tibiae fully as long as the abbreviate metatarsus, the upper nearly as long, the undermost only about two-thirds of the middle one. Upper and middle outer spur a little longer than the lower inner one, the lower outer shorter. Valves of ovipositor with integer margins, the lower ones decidedly shorter than the upper. ♀ subgenital plate uniformly arched, almost semicircular, obtuse-angled at apex. Preceding sternite with a distinct, large, transverse pit which is bounded distally on either side by an ear-shaped process overlapping it from the hind margin (fig. 16).

Onosandridus larvatus nov. sp.

1 juv. ♂ (type), Cape Town, L.P., June 1885.

Though we have to do with a rather young specimen, all its characters are already so strongly marked that the species may be satisfactorily described from it. The measurements are to be considered, naturally, as of mere relative value, viz. :—

♂, width of head 4·8 mm., length of body 12·5 mm., of pronotum 3·2 mm., fore femora 4·3 mm., hind femora 11 mm., hind tibiae 9·7 mm.

Body uniformly dark brown above, almost blackish, but the occiput somewhat paler brown, and the lateral lobes of pronotum becoming gradually ferruginous backwards. Antennae brown, the two first joints pale yellowish, with a darker brown longitudinal stripe along inner side. Fastigium verticis, frons, and fore part of genae black. Lower ocellar dot distinct, circular, well defined, dark yellow. In addition, a similarly coloured, somewhat larger, but less well-defined spot is present from the inner angle of antennal scrobes towards the middle and downwards. Genae, except their foremost part, pale brownish yellow. The mouth parts of a similar colour, but the clypeus along the upper margin and lower part of labrum darkened. Legs pale brownish yellow. Fore and middle femora

gradually more or less darkened distally, hind femora somewhat darker above, but at knee itself decidedly pale above. Tibiae darker basally than distally, the colour gradually becoming paler. Whole ventral surface of body uniformly pale brownish yellow.

Head globose, decidedly wider than pronotum. Fastigium verticis not quite one and a half times as wide as first antennal joint. Frons, cheeks, and mandibles without any processes, the latter ♀-like, fitting close to clypeus and labrum, without any gaping space between them. Genae with a few shallow, parallel, oblique impressions, hind margin linear, but not lamellate. Pronotum somewhat compressed in middle part by the strong impression of the broad, not well-defined ascending branch of V-sulcus. Lateral lobes somewhat longer than high, with rounded hind margin. Fore and middle coxae with a short, sharp spine. Prosternum with two rather large tubercles side by side. Mesosternal lobes triangular, metasternal lobes slightly rounded.

All femora unarmed ; the hindermost strongly thickened basally, attenuate distally. All genicular lobes spineless, rounded. Fore tibiae without tympana ; except for the apical spines unarmed above on outer side, on the inner side with 2 spines, below with 4 spines on either side. Middle tibiae, except the apical spines, above with 3 spines on either side, with 4 below. Hind tibiae very feebly curvate, above with 8 to 10 spines on either side which are scarcely half as long as the tibia is thick ; below with a preapical spine on either side and, moreover, with 2 similar spinelets on the outer side in the distal half. The upper apical spurs strikingly far removed from the middle ones, hardly shorter than those. Middle inner spur a little shorter than metatarsus, the outer one only as long as metatarsus from base to the end of first pulvillus. Lower apical spurs hardly two-thirds as long as the middle ones, and also decidedly more slender.

♂ subgenital plate almost quadratic, truncate at the end, and with a slender style on either side which is almost as long as the subgenital plate. Surface with a blunt median keel, on either side of it a large, rather deep, darkened pit.

This species is very well characterised and cannot be mistaken for any one of the others. The armature of the middle tibiae distinguishes it at once from most of the other species and agrees with *Henicus monstrosus*. The coloration of hind knees also would fit *Henicus* better than *Onosandridus*, but as the type specimen is a ♂ and has no frontal processes like *Henicus*, it must be placed in *Onosandridus*.

Onosandridus calcaratus nov. sp.

1 ♀ (type), Beaufort West, Cape Colony, Dr. Purcell, 1905.

Measurements, ♀.—Width of head 5·3 mm., length of body 15·5 mm., of pronotum 5·0 mm., fore femora 5·2 mm., hind femora 10·3 mm., hind tibiae 9 mm., ovipositor 8·4 mm.

General colour brownish yellow, thoracic and abdominal tergites with blackish cross-bands along the hind margins.

Head not or hardly wider than pronotum. Occiput arched, with a sharp blackish stripe along each supraocular sulcus, and with an U-shaped black line between them slightly interrupted in the middle. Fastigium of vertex but little wider than first antennal joint, grey; on either hind angle there is present an outwardly directed, well-defined, whitish ocellar spotlet, and from here extends backwards a black longitudinal line ascending for a short distance on the vertex. Eyes grey. Antennae ferruginous, the two first joints paler, yellowish, with a dark spot on the inside. Lower ocellar spot well defined, whitish, acutely pointed above, and reaching here the lower margin of fastigium verticis. Frons and cheeks brownish yellow; below antennal base a large, not well-defined, nebulous, brownish-grey spot, and a similar one below each eye. Mandibles in the free part and clypeus above brownish yellow; clypeus below and labrum dark.

Pronotum somewhat darker than the remaining part of body, ferruginous, diffusely blackish along hind margin; almost quadratic in dorsal view, with a median sulcus nearly throughout its whole length. Otherwise there is no other sculpture distinguishable with certainty, except a large, shallow depression in the anterior part of lateral lobes. These about as long as high, with the lower margin slightly rounded, fore and hind angle obtuse-angularly rounded.

Fore and middle coxae with a short, tooth-like, sharply pointed spine, blackish at the tip. All femora spineless, uniformly coloured, except the knees which are narrowly and diffusely darkened. Hind femora shaped as in *Onosandrus tigrinus* (fig. 18). Fore tibiae without tympana, above on the inner side with 2 spines; middle tibiae above on the outer side with 2, on the inner side with 3 spines (excluding apical spines). Hind tibiae with 11 short spines above on either side; below, besides the usual preapical spines, with but a very small spinelet on the outer side at about the end of middle fifth. The middle inner spur somewhat longer than the metatarsus, the uppermost only about half as long, the lower one even shorter. Outside, the relative lengths of spurs practically the same, but all outer spurs

shorter than those inside, the middle one hardly three-fourths as long as metatarsus.

Cerci short and slender. Ovipositor very strongly upcurved in basal part, thence almost straight, sharply pointed at apex. ♀ subgenital plate (fig. 16) almost an equilateral triangle, rounded at the apex, and here with a weak median sulcus; before this, a horse-shoe-shaped carina, opening backwards, embracing a depression, and surrounded outside by some further depressions.

Fig. 16.—♀ subgenital plate of *Onosandridus plebeius* (left: magnification as in fig. 6) and *calcaratus* (right: magnification as in fig. 7).

This new species reminds one of the ♀♀ of *Henicus* (*monstrosus*, *brevimucronatus*) by the shape and colour of the head, but the length and shape of the ovipositor and the structure of the hind femora definitely exclude it from that genus according to my opinion. I therefore think it better to place it in *Onosandridus*, where it can be easily distinguished with certainty from all the hitherto known species. By the coloration, by the shape of the hind femora, and by the relative lengths of the apical spurs of the hind tibiae, it is strikingly similar to *Onosandrus tigrinus*, but differs from it by the fore tibiae being two-spined above, by the more slender form, by the shorter ovipositor, and by the different structure of the ♀ subgenital plate.

Gen. Onosandrus Stål.

Key to the African Species of Onosandrus.*

I have included in this key the species from the African continent only. Besides these, the genus is also represented in Madagascar and in New Zealand, and one species is supposed to have been recorded from India (! ?). These are not incorporated in the key below.

1. Fastigium verticis flattened or even almost excavate.
   2. Thoracic and abdominal tergites with distinct black bands along hind margins . . . . . *Onosandrus bipinnatus* nov. sp.
   2′. Dorsal surface of body fairly uniformly coloured, without well-defined bands along hind margins.
      3. Lateral lobes of pronotum twice as long as high. Hind femora more slender (fig. 17) . *Onosandrus opacus* Brunner v. W.
      3′. Lateral lobes of pronotum hardly longer than high. Hind femora strongly thickened . . *Onosandrus splendens* Sjöstedt.

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* For the ♀♀ compare also the genus *Platysiagon* and the *Henicus* spp. *monstrosus*, *brevimucronatus*, and *pattersonii*.

1′. Fastigium of vertex arched.
2. Hind femora with small spinelets below in distal half.
3. Hind tibiae of ♂ decidedly curved. Ovipositor scarcely more than half as long as hind femur . *Onosandrus fasciatus* Stål.
3′. Hind tibiae of ♂ straight. Ovipositor at least two-thirds as long as hind femora.
4. Surface of body brownish yellow to castaneous ; thoracic and abdominal tergites with blackish cross-bands along hind margins . . . *Onosandrus natalensis* nov. sp.
4′. Surface of body uniformly blackish.
5. Hind femora three times as long as pronotum. Hind tibiae above with 10 spines on the outer side, 8 on the inner side *Onosandrus fuscodorsalis* Sjöstedt.
5′. Hind femora fully four times as long as pronotum. Hind tibiae above with 8 to 10 spines on the outer side, with 7 spines on the inner side *Onosandrus mediocris* Péringuey.
2′. Hind femora quite unarmed.
3. Lateral lobes of pronotum as long as high. Middle inner spur of hind tibiae twice as long as the uppermost and decidedly longer than metatarsus.
4. Hind margins of all tergites with well-defined blackish cross-bands. Ovipositor almost as long as or even longer than the hind femora. ♀ subgenital plate triangular, sharply pointed. Body heavier *Onosandrus tigrinus* nov. sp.
4′. Hind margins of tergites not or hardly darkened. Ovipositor decidedly shorter than hind femur. ♀ subgenital plate rounded at apex *Onosandrus crassipes* Brunner v. W.
3′. Lateral lobes of pronotum longer than high. Middle inner spur of hind tibiae as long as the uppermost, shorter than metatarsus *Onosandrus saussurei* Brunner v. W.

Onosandrus bipinnatus nov. sp.

1 ♀ (type), Johannesburg, Dr. Purcell, 1905.

Measurements, ♀.—Width of head 5 mm., length of body 16·8 mm., of pronotum 5 mm., fore femora 4·6 mm., hind femora 13 mm., hind tibiae 11·3 mm., ovipositor 6·8 mm.

Pale ferruginous yellow. All thoracic and abdominal tergites with blackish cross-bands along the hind margins, decidedly wider on the three thoracic segments than on abdomen ; pronotum also narrowly darkened along the fore margin. Head coloured like that of *Onosandridus calcaratus*, but the occiput without an U-shaped line ; on the contrary, with a fine, sharp, pale yellow median sulcus running over the occiput and vertex to the base of fastigium verticis, where it

suddenly stops. Fastigium verticis almost one and a half times as wide as first antennal joint, flattened, and somewhat depressed in the middle; grey, transversely blackish along upper border, but emitting no black longitudinal lines backwards. Eyes black. Antennae brownish yellow, the basal joints also immaculate. Lower ocellar spotlet pale yellow, transversely truncate above, distinctly separated from the lower margin of fastigium verticis, produced downwards into a vertical band of the same colour which occupies fully half the height of frons. Cheeks pale yellow; frons of the same colour, but irregularly clouded with grey, especially so below the eyes. Mouth parts pale yellow throughout.

Pronotum ferruginous yellow, shaped as in *Onosandridus calcaratus*, blackish along fore and hind margin. No sculpture distinguishable with certainty, except a median sulcus running throughout the whole length of the disc, and a feebly indicated hind branch of V-sulcus about the middle of the lateral lobes. Fore and middle coxae with a rather short, acute tooth. Femora as in *Onosandridus calcaratus*. Fore tibiae absolutely without tympana, though somewhat depressed in this region, with but 1 long spine above on the inner side at the middle. Middle tibiae above with 2 spines on the outer side, with 3 on the inner side besides the apical ones. Hind tibiae above on the outer side with 7, on the inner side with 8 spinelets, below on the outer side with 2 such in distal half and the usual preapical spinelets. Middle inner spur as long as metatarsus, the uppermost but very little shorter, the lower one scarcely half as long. Upper outer spur about three-fourths as long as the inner one, middle outer slightly shorter, lower one hardly shorter than the inner undermost.

Ovipositor as in *Onosandridus calcaratus*, but blunt at tip. ♀ subgenital plate moderately large, trapezoidal, slightly emarginate at the apex; surface of this and of the preceding sternite without sculpture.

This species reminds one in general appearance, in coloration, and especially in its short, thick hind femora strongly of *Onosandridus calcaratus* and *Onosandrus tigrinus*, but differs from both by the relative lengths of the hind tibial apical spurs, by the shape of the ♀ subgenital plate, and also by the darkened fore margin of the pronotum; from *calcaratus*, moreover, by the armature of the fore tibiae, and from *tigrinus* by the much shorter ovipositor. According to the structure of the fastigium verticis, *bipinnatus* must be placed, not with the *crassipes* group, but near *opacus*. According to Brunner, this latter has the hind femora " uniseriatim pinnata " (compare the

following description), whereas they are bipinnate in *bipinnatus* just as in *tigrinus* (fig. 18).

Onosandrus opacus Brunner v. W.

I place the following specimens in this species :—

1 ♂, 1 ♀ (*Onosandrus saussurei*, det. Péringuey), Kalk Bay, J. H. Power, 1914 ; 2 juv. ♀♀, 1 juv. ♂, same locality and collector ; 1 very young ♂, Stellenbosch, Barnard, 1913.

The last specimen is too immature to be determined with certainty ; it may belong either to this or to another closely related species. The others without doubt all belong to the same species, though only the two first-named are mature enough to enable me to give a more detailed description. Their measurements are :

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	5·6	21·0	5·5	6·0	14·5	12·5	..
♀	5·0	20·5	5·0	5·5	14·5	12·8	11·5

Péringuey's identification of this species as *saussurei* is without doubt erroneous, for the fastigium verticis is decidedly flattened and even a little excavate on surface ; furthermore, in *saussurei* the ovipositor is slightly longer than the hind femora, whereas in these specimens before me it is decidedly shorter. According to Brunner's key, I have no doubt in referring them to *opacus*, and there is nothing in the original description that would be in conflict with this identification. It certainly is very short and says nothing on some of the important characters, so that an absolutely certain determination is not possible from it alone. Nevertheless, I think it very probable that the specimens before me belong to *opacus*, and I give here a short description of them.

Fig. 17.—*Onosandrus opacus*, ♂, lateral view, natural size. (Del. Goesti Abdoelkadir.)

Occiput and vertex arched, rather dark brown, with 2 to 3 longitudinal blackish lines and the sides strongly darkened. Fastigium verticis black, with an ovate or piriform outline, slightly wider than the first antennal joint ; surface slightly excavate and finely

impresso-punctate. All three ocellar dots present, dark yellow, the upper ones almost circular, directed outwards, the lower one larger, not well defined. Eyes brownish grey. The two first antennal joints pale brownish yellow, the first slightly darkened in the middle ; following joints darker, brown. Frons and cheeks pale yellow, without a distinct sculpture, below the antennae and eyes with an ill-defined blackish-grey nebulous patch. Mouth parts brownish yellow, shaped in ♂ as in ♀.

Pronotum decidedly longer than wide, slightly dilated forwards, yellowish brown, with indistinct blackish lines on the disc, strongly darkened along the margins, but pale again near the fore angle of lateral lobes. No sculpture distinguishable with certainty. Lateral lobes about twice as long as high, fore and hind angle strongly rounded. Prosternum with 2 small tubercles. Mesosternal lobes produced into an acute, almost spine-like point. Metasternal lobes almost rectangularly triangular. Meso- and meta-notum and abdominal dorsum dark brown, but with a faded yellowish-brown median line, the colour of the segments often also slightly paler before hind margins, the margins themselves darker again. Ventral surface brownish yellow.

Fore and middle coxae with a sharply pointed, not very long spine. All femora unarmed, brownish yellow, decidedly paler above at the knees as in *Henicus monstrosus* and *brevimucronatus* ; femoral surface with a more or less distinct blackish reticulation, distinguishable on the outer surface of hind femora either in the upper half only (unipinnate) or on lower half also (bipinnate) ; this character, to which Brunner called special attention, seems therefore to be of no specific value. Posterior (=inner) genicular lobes of middle and hind legs ending in a small, acutely pointed spine ; the outermost of hind legs with a similar spinelet at lower margin before the middle. All tibiae basally darker than the femora, and there with a faded, yellowish, annular spot, distally gradually becoming paler brownish yellow in apical part. Fore tibiae with a slight impression on either side in tympanal region, without a tympanum on the outer surface, whilst there is one present in ♂ on the inner surface, but not distinguishable with certainty in ♀ ; above on the inner side with 1 spine slightly beyond the middle. Middle tibiae, besides the apical spines, above on the outer side (=cephalad) with 2, on the inner side (=caudad) with 3 spines. Hind tibiae straight, above on the outer side with 8 to 10, on the inner side with 9 to 10 spines which are about half as long as the tibia is thick ; below, besides the preapical spines, 3 to 4 spinelets on the outer side and 1 on the inner side beyond the middle. The upper

apical spurs on either side rather distant from the middle ones. Middle inner spur as long as metatarsus from base to end of first pulvillus, the uppermost hardly longer, the undermost slightly more than half as long as the middle one. Relative lengths of the outer spurs similar to inner ones, the upper one about two-thirds as long as the upper inner one.

♂ subgenital plate semicylindrically arched, rounded at the end, brownish yellow, with well-developed reddish-brown styles. Processes of anal valves horn-like as usual, decidedly shorter than the cerci. Ovipositor decidedly, if only slightly, shorter than the hind femora, very slightly upcurved, rather pointed at apex; all the valves with integer margins and of equal length. ♀ subgenital plate small, bluntly triangular, almost semicircular.

Onosandrus splendens Sjöstedt.

1912. Sjöstedt, Ark. Zool., viii, No. 6, p. 17, pl. 3, fig. 1.

I only know this species from Sjöstedt's description and figure. It is not represented in the collection of the S.A. Museum. As may be seen from Sjöstedt's figure, it is more massive than *opacus*, the hind femora much more thickened basally, and the lateral lobes of pronotum relatively shorter and much higher. Thus it may easily be confounded with *opacus*.

Onosandrus fasciatus Stål.

Compare Sjöstedt, Ark. Zool., viii, No. 6, p. 18, pl. 3, fig. 2, 1912.

Not represented in the collection before me. It was always confounded with the following species until Sjöstedt pointed out the differences between them in the paper cited above.

Onosandrus natalensis nov. sp.

Syn.: *O. fasciatus* Brunner v. W., 1888, *nec* Stål, 1876.

Sjöstedt has pointed out that *fasciatus* Brunner v. W. cannot be identical with Stål's species. He supposed that the former might be synonymous with *fuscodorsalis*. There are, however, some differences to be mentioned: the legs of Brunner's species are shorter in proportion to the body than in *fuscodorsalis*, the ovipositor is relatively longer, and the colour also is not quite identical in both species. I therefore think it more prudent to keep Brunner's species separated provisionally, and here propose a new name for it.

1 ♂, Natal, Durban, purch. J. James, March 1888.

The specimen was already determinated as *Onosandrus fasciatus* (without any indication as to who determined it), probably from Brunner's monograph. The author of the determination apparently did not know at the time that *fasciatus* Brunner v. W. was not identical with *fasciatus* Stål, which Sjöstedt demonstrated in 1912. The abdomen of this specimen has been immoderately extended during preparation; for the rest, the measurements agree quite well with those given by Brunner. Lateral lobes of pronotum but little longer than high. Hind femora (fig. 18) much more slender than in *tigrinus* and *crassipes*. Hind tibiae quite straight, above on the outer side with 9, on the inner side with 7 spines, whereas in the other species there are usually more on the inner side than on the outer side. Upper and middle inner spur a little shorter than metatarsus. ♂ subgenital plate elongately trapezoidal, transversely truncate at the end; styles wanting in the specimen before me (probably broken off at base). Processes of anal valves as long as the cerci and decidedly wider than these, depressed, parallel-sided to beyond the middle, from whence they are attenuated to an acute point in apical third.

Onosandrus fuscodorsalis Sjöstedt.

1912. Sjöstedt, Ark. Zool., viii, No. 6, p. 19.

Not represented in the collection before me. I only know this species from Sjöstedt's description.

Onosandrus mediocris Péringuey (*loc. cit.*, p. 421).

1 ♂ (type), no locality label.

Distinguishable at a glance from the two most closely allied species, *natalensis* and *fuscodorsalis* (with the original descriptions of which I could only compare it and not with the type specimens), by the decidedly shorter pronotum.

Middle inner spur of hind tibiae as long as metatarsus along its upper edge, thus somewhat shorter than the average length of metatarsus; upper inner spur almost as long as the middle one. Upper and middle outer spur about equal in length to each other, two-thirds as long as the inner ones. Lower spur, on either side, not quite half as long as the middle one. Preapical spinelets very short and delicate, inconspicuous.

Onosandrus tigrinus nov. sp.

1 ♀ (type), Smithfield, O.F.S., Kannemeyer, "Orangia," 1910 ("*Onosandrus spec.*" in coll., without name of author of determination). 1 ♀ (det. Karny) ("♀ immatura sine tibiis anticis non determinanda," det. Griffini; further with a second label: "*? Onosandrus* vel *Carcinopsis*," without name of author of determination), Cape Colony, Hanover, 1901, Cron. Schreiner. 1 young ♀ (det. Karny), Smithfield, O.F.S., Kannemeyer, 1908; its ovipositor still very short, though already rather slender; bands of tergites easily distinguishable, but not yet as well defined as in the larger specimens.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♀	6·4	18·0	6·0	5·7	13·7	12·0	11·9
♀	6·5	15·5	5·3	?	11·7	10·5	13·3

At first I mistook this species for *crassipes*, with which it agrees well in most of its characters. Then I found amongst the material of the British Museum a true *crassipes* (♀) for comparison, and from this I have been convinced as to the specific difference of the two (compare key to the species).

All thoracic and abdominal tergites with well-defined black bands

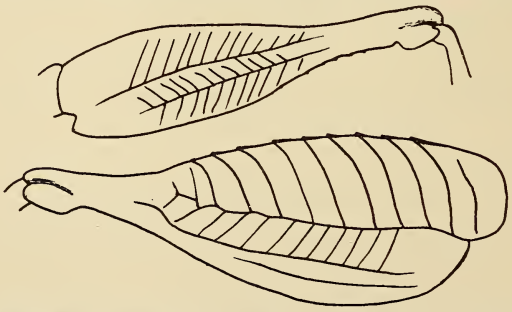

Fig. 18.—Hind femur (seen from outside) of *Onosandrus natalensis* (above) and *tigrinus* (below).

along hind margins, but even the pronotum without a fore marginal band. Fastigium verticis somewhat darkened, but the margins broadly pale yellowish. Face pale, with a distinct dark subocular spot. Tergites pale yellowish laterally and paler there than the

ferruginous dorsum ; lateral lobes of pronotum with a dark middle spot. Fore and middle tibiae normally spined, the upper fore tibial spine being situated slightly basally from the middle. Hind tibiae above on the outer side with 11 to 12, on the inner side with 10 to 11 dark-tipped spines. Ovipositor about as long as hind femur, slender, uniformly slightly upcurved, rather pointed at apex. ♀ subgenital plate rather large, of the shape of an equilateral triangle, uniformly pointed at the tip, not blunt. All other characters as in *crassipes*.

Onosandrus crassipes Brunner v. W.

Not represented in the material of the South African Museum. For comparison I had before me a ♀ from the British Museum which certainly specifically differs from *tigrinus*.

Onosandrus saussurei Brunner v. W.

Not present in the collection now before me. Two specimens (♂, ♀) determined by Péringuey as *saussurei* I have placed with *opacus* (see above).

Gen. Henicus Gray.

For key to species see *Onosandridus*.

I cannot regard Stål's *Mimnermus* as a different genus. It may be considered either as a synonym of *Henicus* or as a subgenus of it. In this latter case the genus *Henicus* should be divided into two subgenera as follows :—

Frontal processes of ♂ short, triangular or conical, sharply pointed at the end, more or less outwardly directed. Ovipositor hardly one-third as long as the hind femora . . . . . subgen. *Mimnermus* Stål.

Frontal processes of ♂ cylindrical or horn-shaped, forwardly directed. Ovipositor not at all or but little shorter than the hind femora

subgen. *Henicus* Gray s. str.

Henicus (*Mimnermus*) *pictifrons* (Péringuey) (*loc. cit.*, p. 422).

1 juv. ♀ (type), Nylstroom District, Transvaal, A. Tucker, 1906.

This species has been described by Péringuey as *Onosandridus*. According to a ♂ specimen now before me in the material of the British Museum, it must, however, be placed in *Henicus* (*Mimnermus*) and is closely related to *prodigiosus*. I shall return to that specimen in another publication, and will only state here that the structure of

the head is practically the same as in *prodigiosus*, whereas the colour characters are quite as in the type ♀ and thus different from *prodigiosus*.

Colour of frons very characteristic for the species. Occiput and vertex with a narrow, well-defined, fine longitudinal sulcus, suddenly stopping at the base of the fastigium verticis and not extending on to it. Lateral lobes of pronotum broadly pale yellow along lower margin, black along fore and hind margin. Fore and middle femora just before the knee with a small black spot, the knees themselves being pale ; hind knees almost entirely black. All genicular lobes spineless. Hind tibiae black above along both edges, but the spines pale ; 8 on the inner side, 7 on the outer side, the last of them much smaller and weaker than the others, situated just before the upper apical spur ; the others decidedly longer, stronger, and more acutely pointed than in *Onosandridus plebeius*. The upper inner spur of hind tibia slightly longer than the middle one, the latter as long as the first and second tarsal joint taken together ; lower inner spur half as long as the middle one. Upper and middle outer spur as long as metatarsus along its upper edge ; the undermost a little shorter, as long as that of inner side. All abdominal sternites pale yellow, with a black spot at base on each side. Ovipositor quite straight, acutely pointed, very short (larval).

Besides this type specimen I also place with this species 2 ♀♀ from Johannesburg, Cregoe, 1897 ; one of these specimens has a label "*Onosandrus pictifacies* sp.n." without the name of the author, and another one by Griffini : " spinae 2 superae tibiar. anticarum notandae, ut in *O. puncticeps* Pict. et Saussure, 1891 (gen. *Onosandrus ???*)."

The measurements of these two specimens (the second being that labelled as "*pictifacies*") are :

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♀	6·8	19·0	5·6	6·3	13·7	12·3	7·8
♀	7·2	20·0	5·8	6·5	13·9	11·8	8·0

Both specimens agree very well with the type in all morphological characters, but the middle inner spur of hind tibiae is as long as, or even a little longer than, the uppermost. The colour is more intense than in the type, especially the pronotum, which is more castaneous

brown. Face with similar markings as in the type, but in the first specimen (without a determination label) the pale vertical band on the frons is interrupted by a black cross-stripe close above the clypeus, thus connecting the black markings on the sides of the frons. In the other specimen (with Griffini's label) the markings on the face are as in the type, the black parts of the latter (fastigium verticis and sides of frons), however, being only castaneous in this case, passing into black only lower down at the base of the mandibles. For all the three specimens it is very typical that the lateral lobes of the pronotum are pale yellow below, especially towards the anterior angle, and that the meso- and meta-notum show a large, upright, yellowish spot laterally. As the sexual characters are not discernible in the (obviously still larval) type, I can only state that the ovipositor is shaped practically as in *Onosandridus plebeius*; ♀ subgenital plate very large, about one-fourth as long as ovipositor, shaped like an equilateral triangle, broadly rounded at the end, even slightly emarginate in the middle. Shape of hind femora the same in all the three specimens, practically as in *Onosandrus tigrinus* (fig. 18).

Henicus (*Mimnermus*) *prodigiosus* (Stål).

♂=*Nasidius bechuanus* Péringuey, *loc. cit.*, p. 416.

♀=*Nasidius ferox* Péringuey, *loc. cit.*, p. 417.

1 ♂ (type of *bechuanus*), Vryburg District, J. M. Bain. 1 ♀ (type of *ferox*), Zambesi, Matoppos, Pillans, also with the label ("verisim.: Gen. nov., apud Gen. *Platysiagona* Br. locandum, voir les 2 épines aux tib. anter. aussi chez *Onos. puncticeps* Pict. SSS. 1891," det. Griffini).

These two specimens have been described by Péringuey as two different species of *Nasidius*, but no specific differences can be gleaned from his species key as *ferox* is not included in it. From his descriptions too, and from the types now before me, I am unable to see any differences of specific value. On the contrary, the two specimens agree entirely with each other in all structural and colour characters, with the exception of the secondary sexual characters. The only fact remaining is that the ♀ is considerably larger than the ♂. We must keep in mind, however, that such differences in the measurements—so far as they are not relative, but absolute only—are not very important in Henicinae, because we can very often (if the sexual characters are not already well developed) not make out with certainty whether we have to do with fully grown or larval specimens. In this connection I may recall Burmeister's two types of *dregii* (see above), which show quite as great differences in size as *bechuanus* and *ferox*.

Furthermore, it seems that the size varies according to the localities, and it is not improbable that the species becomes larger from Cape Colony (*bechuanus*) towards the tropics (*ferox*). Thus, I regard *bechuanus* and *ferox* as one and the same species, but they cannot belong to *Nasidius* at all, on account of the quite different structure of the ♂ head. Furthermore, the hind femora too are different from those of *Nasidius*, being decidedly stronger and more thickened basally. There is no doubt that all these characters hint at *Henicus*.

According to Brunner's key, *bechuanus* undoubtedly comes down to *Mimnermus prodigiosus*, and from Stål's rather detailed description I cannot find any difference between *bechuanus* and it, except that Stål characterises his *prodigiosus* by "dorso thoracis et abdominis nigricante," whereas in *bechuanus* and *ferox* all the tergites behind the pronotum are

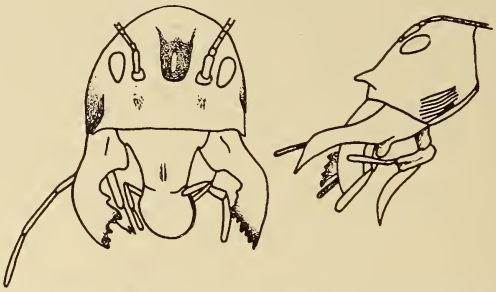

Fig. 19.—*Henicus* (*Mimnermus*) *prodigiosus*, ♂ (type of *bechuanus*). Head in frontal and lateral view.

brownish yellow with blackish bands along hind margins. But if these bands were to become slightly broader and the tergites a little more telescoped, the yellow colour would disappear. I cannot therefore regard this single difference as important, and thus I place *bechuanus* and *ferox* as synonyms of *prodigiosus*.

I will complete the published descriptions by the following additions: The "median infuscate patch" mentioned by Péringuey is the somewhat darkened fastigium verticis of ♂; in ♀ it is scarcely darker than its surroundings. What Péringuey calls "clypeus" in the description of *bechuanus* is the frons, and his "labrum" is the clypeus! The latter is much longer and narrower in ♂ than in ♀, and bluntly obtuse-angularly produced basally on either side in both sexes. Pronotum semicylindrical, *not* "saddle-like," its disc entirely dark brown, but at the transition into the lateral lobes with a rounded, not very well-defined yellowish spot on either side in ♂, only very slightly and diffusely paler in this region in ♀. Lateral lobes a little

longer than high, with rounded angles, becoming gradually paler from the disc towards the lower margin, brownish yellow below. All femora and genicular lobes spineless. When giving the numbers of middle tibial spines, Péringuey did not include the apical spines, whereas in other cases he usually includes them like Brunner. Hind tibiae above on the outer side with 7, on the inner side with 7 to 9 (usually 8) spines, the last of them placed just before the upper apical spur and being much smaller than the others. The upper inner spur of hind tibiae about as long as metatarsus, the middle one even somewhat longer, the undermost only about half as long as the middle one. Upper and middle outer spur a very little longer than the lower inner; lower outer spur a little shorter. ♂ subgenital plate transversely truncate at apex, with rather well-developed styles. Anal valves above inside produced into a straight horn-shaped process as in *Faku dregii*; cerci slenderer and but little longer than these processes. Between the latter, the end of the supra-anal plate projects upwards and backwards as an acutely pointed, spine-like, triangular process. ♀ subgenital plate having the shape of an equilateral triangle broadly rounded at the end, with a fine median sulcus distally; its whole surface, together with the distal half of the preceding sternite, strongly wrinkled transversely.

Henicus pattersonii (Stoll).

This species was described by Stoll as "de gehoornde water-krekel," probably only because he mistook the palpi for "Kieuwen." Already, in 1839, Westwood opposed Stoll's opinion with the words: "It is quite evident, from the saltatorial structure of the legs, and the impossibility of the insect executing a leap under water, from the natural resistance of the element, that there must be a mistake in the statement that it is aquatic in its habits." However, in the literature nothing has thus far been made known as to the actual habits of this species.

1 ♂, 1 ♀ (det. Péringuey, *loc. cit.*, p. 418), Swellendam, L. E. Taylor, 1907.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	10·3	23·3	6·5	8·8	21·4	18·7	..
♀	7·5	27·3	7·0	9·0	24·0	21·8	20·0

Differs from the other *Henicus* species at a glance by the muchdarker colour : body almost entirely shining black above, but the occiput and pronotum partially castaneous, the latter, however, at least along fore and hind margin, also black. The legs are also much darker than in the other species, and the hind knees in particular are not paler above. By the shape of head (♂) and the armature of legs it is nearer related to *brevimucronatus* than to any other species, but is also very well distinguished specifically from this species.

Genicular lobes of fore legs on either side, of middle legs on the outside, rounded, spineless ; inner lobes of middle and hind knees with a sharply pointed spinelet at apex, the outer genicular lobes of hind legs with a spinelet on the lower margin as in *brevimucronatus* (fig. 20). Fore tibiae in both specimens before me with a distinct tympanum on either side, above (besides the apical spines) with but a single spine on the inner side only slightly beyond the middle. Middle tibiae spined as in *brevimucronatus*. Hind tibiae with 10 spines above on either side which are more than half as long as the tibia is thick ; below in distal half with 3 spinelets on the outer side and 1 on the inner side ; further, the usual preapical spines. The middle inner spur scarcely shorter than metatarsus, the upper one somewhat shorter than the middle, the undermost only about one-third as long as the middle one. Upper and middle outer spur slightly more than half as long as the middle inner one, the undermost about as long as the inner.

♂ subgenital plate a little longer than wide, very obtuse-angularly emarginate (almost transversely truncate) at apex, with not very large styles. Ovipositor long and slender, slightly upcurved, very similar in shape to that of *brevimucronatus*. ♀ subgenital plate shaped like an equilateral triangle, but rounded at the apex ; preceding sternite transverse, without a distinct sculpture, except a very blunt median carina in distal part.

Henicus brevimucronatus Griffini.

1911. Griffini (146), Rev. Suisse Zool., xix, p. 494.

Syn. : *Henicus promontorii* Péringuey, *loc. cit.*, p. 418.

Described by Griffini as a subspecies of *pattersonii*, but without doubt a well-separated species. I have compared Péringuey's type specimens of *promontorii* with the very detailed description of Griffini, and I find that they agree with it in every detail. Péringuey has apparently overlooked Griffini's paper. I have nothing of importance

to add to Griffini's description, but I may mention that the outer genicular lobes of hind femora are rounded at the end, bearing a distinct spinelet on the lower margin (fig. 20); the inner ones unarmed on lower margin, but produced at apex—as already pointed out by Griffini—into a rather strong spine (fig. 20). Griffini was cautious enough to place the female as questionably belonging to this species, but in fact there can be no doubt that it belongs here, its description agreeing completely with the ♀♀ of *promontorii*.

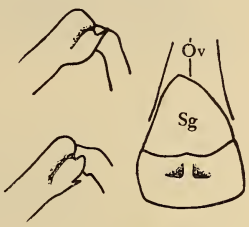

Fig. 20. — *Henicus brevimucronatus*. Left: Hind knee of ♂ (type of *promontorii*) seen from inside (above) and from outside (below). Right: ♀ subgenital plate. Magnification as in fig. 6.

1 ♂ (type of *promontorii*), Cape, Cape Town, pres. August 1889; 1 ♂, 1 ♀, 1 juv. ♂, Newlands, H. M. Oakley, 10th June 1883; 1 ♀ (allotype of *promontorii*), Newlands, Purcell; 1 ♂, Cape Town, Tucker; 1 ♀, Cape Town, July 1880, Devil's Peak, Waterfall, C.L.-M.; 1 juv. ♂, Houw Hoek, W. F. Purcell, August 1900.

The last-named specimen was determined (probably by Péringuey) as *pattersonii*; but I must place it with *brevimucronatus* according to the armature and the colour of head.

All the specimens before me show on fore tibiae above on the inner side, besides the apical spines, but one spine slightly beyond the middle; on the right fore tibia only of Oakley's ♀ even this is absent. This right fore leg is without doubt a regenerate, being slightly shorter than normal, the tibia somewhat curved and more thickened distally than usual, the spines on lower edges much shorter than normal, beginning only beyond the middle; metatarsus with but one pulvillus, and the tarsal joints, on the whole, somewhat shorter than usual.

Henicus monstrosus (Herbst.).

1 ♂, Cape Town, 1909; 1 ♂, Cape Town, H. Miller, 1906; 1 ♂, Cape Town, E. S. Pillans; 1 ♀, Cape Town, R. Trimen, 1878, R. Lightfoot, June 1885; 1 ♀ (det. Karny), Stellenbosch, L.P., 1897.

The ♂♂ (fig. 21) are recognisable at a glance by the extraordinarily characteristic shape of the head, and cannot be mistaken for any other species. The second ♂, as enumerated above, shows on both fore tibiae above on the inner side but one spine, the other specimens 2 (besides the apical spines). The number of spines is, therefore,

variable in this species. In the third ♂ enumerated above the head is conspicuously smaller than in the others, but still much broader than pronotum and otherwise too quite normally shaped. The fore tibiae have no tympana in the specimens before me, but in some of them a distinct depression is present at the site in question, though with no distinguishable tympanum. Genicular lobes of hind legs as in *brevimucronatus* (fig. 20), but the spinelets even somewhat weaker and smaller, the innermost hardly distinguishable with certainty.

Fig. 21.—*Henicus monstrosus*, ♂, lateral and dorsal view, natural size. (Del. Goesti Abdoelkadir.)

Head ferruginous, fastigium verticis more or less blackish. Pronotum with a dark median spot and a rather broad transverse black band along fore and hind margins. Following tergites almost entirely black. Hind knees strikingly pale above, whitish yellow.

The ♀ is very similar to that of *brevimucronatus* already described in detail by Griffini ((146), *loc. cit.*, p. 498), but its fastigium verticis a little wider than the first antennal joint, whereas in ♀ of *brevimucronatus* it is hardly as wide as this joint. Moreover, the number of middle tibial spines is a good character in both sexes and always distinguishes *monstrosus* from *brevimucronatus*. Finally, I give here a figure (fig. 22) of the ♀ subgenital plate and preceding sternite (compare it with fig. 20 for *brevimucronatus*).

Fig. 22.—*Henicus monstrosus* (♀ 1878). Subgenital plate and hind femur. Magnification as in fig. 6 (and 18).

Henicus ? spec.

1 ♀ without hind legs and without label.

Though I have but little doubt that this specimen belongs to *Henicus* and represents a new species, I will not erect a new name for it because the hind legs are wanting and the ♂ is unknown, the systematic position thus being at present somewhat uncertain.

Width of head 6·8 mm., length of body 24 mm., of pronotum 5·8 mm., fore femora 6·7 mm., ovipositor 17·8 mm.

Occiput dark brown; hind part of genae paler, brownish yellow. Fastigium verticis and eyes blackish. Antennae pale yellowish, but the first joint with a dark longitudinal stripe inside. Lower ocellar spotlet brown, surrounded by a pale yellowish ring, and this latter surrounded by dark grey. Above this, on either side, a small, circular, pale yellow spotlet still on fastigium frontis. A larger spot of the same colour below the antennal scrobes. Otherwise the frons and fore part of cheeks are blackish grey, but gradually becoming paler towards the middle. Mouth parts pale, brownish yellow, especially the palpi, which are quite pale; clypeus close above lower margin, with a transverse blackish spot produced upwards as a fine line along either lateral margin. Labrum pale above and medially obliquely darkened on either side. Pronotum blackish brown, with some small, rounded, ferruginous spots on disc; lateral lobes for the greater part ferruginous, becoming still paler downwards. Meso- and meta-notum and abdominal dorsum uniformly brownish black. Ventral surface pale yellowish, and, continuous with it, a rounded spot of the same colour on either side of second and third abdominal tergites; on the following segments the pale colour ascending upwards to slightly beyond half the height of the tergites, well defined against the black colour of dorsum; the cerci too are of the same pale colour, the supra-anal plate, on the contrary, dark. Ovipositor ferruginous.

Head globose, somewhat wider than pronotum. Fastigium of vertex almost one and a half times as wide as first antennal joint, rounded, with a slight dimple-like depression on surface. Clypeus transversely trapezoidal, more than twice as wide above as below. Pronotum semicylindrical, almost square in dorsal view, without distinct sculpture; only the V-sulcus of lateral lobes clearly distinguishable, transversely truncate below, occupying the second third of the length of lateral lobes, extending downwards to scarcely beyond the middle; hind oblique sulcus slightly indicated, also

situated much more dorsally than in Gryllacrinae. Lateral lobes longer than high, lower margin slightly rounded, fore and hind angle bluntly obtuse-angular.

Femora and genicular lobes spineless (hind legs unknown !). Fore tibiae without tympana, spined below as usual, unarmed above on the outer side, above on the inner side (besides the apical spine) on left leg with 2, on the right with even 3 (!) spines. Middle tibiae spined as in *monstrosus*, but the right one above on the inner side with a supernumerary well-developed fourth (!) spine closer to the third than to the apical spine.

Ovipositor long and slender, with unbroken margins, slightly upcurved. ♀ subgenital plate as in *monstrosus*, preceding sternite as in *brevimucronatus*, but the two depressions and the median carina not extending so far forwards, restricted to the apical part of sternite, and also less strongly marked than in that species.

The colour characters are very striking and different from those of *brevimucronatus* and *monstrosus*. Armature of middle tibiae agreeing better with the latter species, but the greater number of spines on right fore and middle leg very curious. Ovipositor and ♀ subgenital plate more like those of *monstrosus*, preceding sternite again reminding one of *brevimucronatus*. There is no doubt that this specimen is specifically different from both.

Gen. Platysiagon Brunner v. W.

Key to the Species of Platysiagon.

General colour darker. Hind tibiae above on the outer side with 14 to 15, on the inner side with 12 to 14 spines. ♂ mandibles produced in basal part of inner side into a short, broad, triangular process *Platysiagon signatus* Brunner v. W.

General colour paler. Hind tibiae above on the outer side with 9, on the inner side with 10 spines. ♂ mandibles produced basally inside into a long, horn-shaped process reaching almost to the end of mandibles *Platysiagon capicola* Péringuey.

For ♀♀ compare also with the genus *Libanasa*. On the whole, it is quite possible that the one or other *Libanasa* species may be nothing else than a ♀ belonging to *Platysiagon*. This possibility is excluded only for *impicta* (which is closely related to *Onosandrus*, differing from it only by the presence of distinct tympana on fore tibiae) and for *Libanasidus vittatus*. According to Brunner's key, *Libanasa* (=*Carcinopsis* Brunner v. W. *partim*) and *Platysiagon* are distinguishable

only by the presence or absence of fore tibial tympana ; but as such are sometimes present in *Platysiagon* too, as is shown in the case of the two *signatus* specimens now before me, this character is useless, and there is thus no certain distinction between the ♀♀ of these two genera. Péringuey (*loc. cit.*, p. 425) states for *Libanasa* that " in both Brunner's species, which are, I believe, represented in the Museum collection, the head of the male is simple." This certainly would exclude an identification not only with *Libanasidus*, but also with *Platysiagon*. Péringuey, however, did not describe the specimens alluded to by him, so that it is not possible to make out with certainty whether he had in fact Brunner's species before him. The ♂♂ of them are not yet described, and they are not before me now.

Platysiagon signatus Brunner v. W.

Compare Péringuey, *loc. cit.*, p. 423.

1 ♂ (det. Karny), Beira, Mozambique ; 1 ♀ (det. Péringuey), Delagoa Bay, pres. L. Péringuey, August 1882.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	9·2	21·0	8·7	7·7	18·7	17·0	..
♀	6·5	23·5	9·5	7·5	20·5	18·8	15·6

Brunner mentions this species from Tabora as South-West African (" in Africa meridionali occidentali ") ; Péringuey, however, has already corrected this statement into " East Africa " ; Tabora is situated in the Tanganyika Territory, thus even farther north than the localities of the two specimens now before me.

The four black clypeal spots mentioned by Brunner are very distinct in the ♂, absent in the ♀. Coloration of pronotum somewhat variable. In the ♂ the disc is castaneous brown, blackish laterally, lateral lobes in lower part yellow with a blackish spot ; the narrowed upper point of the yellow coloration extends upwards towards the disc as two yellow spots. In ♀ the pronotum is pitchy brown with a yellowish median line ; on the disc laterally a large yellowish spot shaped like an inverted U, reaching neither the fore nor the hind margin of disc, but the lower margin of lateral lobes, and enclosing in

its lower posterior part some dark spotlets. Abdominal dorsum with a diluted brownish-yellow median band in ♂.

All femora spineless. The inner (=posterior) genicular lobes of middle and hind legs with a very minute triangular spinelet at tip, the outer lobes of hind legs with an indication of a spinelet on lower margin, all the others unarmed. Fore tibiae in both specimens before me with a very distinct, large, partially blackish tympanum on either side ; apart from the apical spines unarmed above on the outer side, with but one spine on the inner side somewhat before the middle. Middle tibiae, besides the apical spines, above on the outer side with 2, on the inner side with 3 spines. Hind tibiae above on the outer side with 14 to 15, on the inner side with 12 to 14 short spines shaped almost like the teeth of a saw, some of them alternately larger and smaller. Brunner did not state the number of spines, but from his figure it seems to be essentially less ; thus I suppose he has not drawn in the smaller spines in the figure. Below, besides the pre-apical spinelets, 2 more spinelets on the outer side beyond the middle, exceptionally a further one at the end of basal third ; on the inner side I cannot distinguish any spinelet at all. Middle inner spur as long as or longer than the first three tarsal joints taken together, the upper one not half as long, the lower still shorter. Outer spurs of the same relative lengths, but all three shorter, the middle one, however, longer than metatarsus.

Ovipositor slender and rather long, moderately upcurved, sharply pointed at tip ; valves with unbroken margins, the upper ones longer than the undermost. ♀ subgenital plate small, shaped like an equilateral triangle, somewhat more sharply pointed at the apex.

Platysiagon capicola Péringuey (*loc. cit.*, p. 424).

1 ♂ (type), East London, 1898.

A very distinct species. Shape of ♂ head reminding one at a first glance very strongly of *Henicus pattersonii*, but the long horn is a process of the mandibular base, whereas in *pattersonii* it is situated above it at the anterior part of cheeks. The coloration too is different in both species. Péringuey's figures (pl. xlii, figs. 5, 5*a*) reproduce all the typical characters very well. The " labrum " of Péringuey is in fact the clypeus. Lateral lobes of pronotum longer than high, strongly rounded, the lower margin, however, somewhat less rounded than in Péringuey's figure. Meso- and meta-notum brownish yellow, with a darker cross-band along hind margin. Hind femora spineless,

spotted with dark in the lower half of outer surface, dark pinnate in the upper half, the brown stripes broader than the pale ones, then with a broad pale ring before the knee, the knee itself blackish, but the extreme apex pale again above. All genicular lobes unspined. Fore tibiae without any tympanum at all. Middle tibiae, besides the apical spines, with 2 spines on the outer side above, and with 3 on the inner side above. Hind tibiae above with 9 spines on the outer side, 10 on the inner side. Apical spurs very typical, the middle ones extremely long on both sides, the inner one about as long as the first three tarsal joints together, the outer decidedly longer than metatarsus, but not quite as long as the two basal joints together ; upper apical spur on either side hardly half as long as the middle one, decidedly removed from it. Lower apical spur short on both sides, scarcely one-third as long as the middle one. ♂ subgenital plate almost quadrate, with slightly arcuated hind margin ; styles very short and slender. Cerci short and weak, very strongly curved.

Gen. Libanasa Walker.

Key to the Species of Libanasa *and* Libanasidus.

1. Hind knees decidedly darkened. Hind tibiae with 9 to 11 spines on either side. Middle inner spur of hind tibiae usually longer than the uppermost.
   2. Middle inner spur of hind tibiae much longer than the upper, decidedly longer than metatarsus. ♂ unknown.
      3. Ovipositor short, one-third as long as hind femur. (Occurring in East Africa : Dar-es-Salaam) . *Libanasa brachyura* Karny.
      3′. Ovipositor long, two-thirds as long as hind femur *Libanasa incisa* Walker.
   2′. Middle inner spur of hind tibiae hardly longer than the upper one, as long as metatarsus.
      3. Hind femora shaped as in *Onosandrus opacus* (fig. 17), decidedly more than twice as long as middle femora. Ovipositor decidedly shorter than hind femur. ♀ subgenital plate with S-curved lateral margins, hind margin broadly rounded and slightly emarginate in the middle . *Libanasa parvula* nov. sp.
      3′. Hind femora strikingly short, at most twice as long as middle femora. Ovipositor almost as long as hind femur. ♀ subgenital plate triangular *Libanasa femoralis* (Brunner v. W.).

1′. Hind knees pale, but the condylus itself, and the furrow bounding the genicular lobes above, black. Hind tibiae with 7 to 8 spines on either side. Middle inner spur of hind tibiae not longer than the uppermost.
   2. Mandibles of similar shape in both sexes, normal, simple. Thoracic and abdominal tergites darkened only diffusely along hind margins. Hind tibiae decidedly curved in the ♂, straight in ♀ ; their spines not quite half as long as the tibia is thick . *Libanasa impicta* (Stål.).

2′. Mandibles of ♂ with a long, upcurved process before the end, crossing the opposite one before the tip. Thoracic and abdominal tergites each with a well-defined deep black cross-band along hind margin. Hind tibiae straight in the ♂, slightly S-curved basally in ♀; their spines fully as long as the tibia is thick

Libanasidus vittatus (Kirby).

Libanasa incisa Walker.

Compare the note under the genus *Platysiagon* above.

Not represented in the collection now before me.

Libanasa parvula nov. sp.

1 ♀ (type), Knysna, W. F. Purcell; 1 juv. ♂, Knysna, Purcell, 1896.

The ♂ is still in too immature a larval stage for me to describe. On the ♀ I give the following remarks :—

♀, width of head 3·5 mm., length of body 13 mm., of pronotum 3·8 mm., fore femora 4·5 mm., hind femora 12 mm., hind tibiae 10·5 mm., ovipositor 8·3 mm.

Uniformly pitchy brown above, brownish yellow underneath.

Head without any process in the ♂, shaped as in ♀. Occiput, eyes, frons, and cheeks uniformly pitchy brown, but the posterior part of genae somewhat paler. The first two antennal joints brownish yellow, the others wanting (broken off). Fastigium verticis somewhat wider than first antennal joint, convex, arcuately narrowed downwards. All three ocellar spotlets distinct, yellow, well defined, relatively rather large, the two upper ones circular, the undermost upright, ovate. Mouth parts brownish yellow, without any peculiarities.

Pronotum semicylindrical, somewhat longer than wide, no sculpture distinguishable with certainty, but in the middle of lateral lobes an almost vertical impression ascending somewhat obliquely backwards, corresponding to the hind branch of V-sulcus, reaching upwards to the sides of the disc. Some indistinct yellowish-brown spots in the region of this impression and on the disc. Lateral lobes fully one and a half times as long as high. Prosternum with two very blunt tubercles. Mesosternal lobes obtuse-angular, metasternal ones arcuately rounded at the end.

Fore and middle coxae each with a triangular tooth. Legs brownish yellow at base, becoming gradually darker distally, the knees and also the upper half of hind femoral outer surface dark brown; tibiae for the greater part dark brown, but before the end becoming pale yellow again; tarsi also pale yellow. Outer surface

of hind femora pinnately sculptured, more decidedly so in the upper than in the lower half, but the pinnae scarcely darkened. All femora unarmed. Hind femora strongly thickened in basal part, slender distally. All genicular lobes rounded, spineless. Fore tibiae on either side with a rather small tympanum, which is yet distinct under certain oblique lighting ; above on inner side with one spine slightly beyond the middle. Middle tibiae (besides the apical spines) above with 2 spines on the outer side and with 3 on the inner side. Hind tibiae with 9 to 10 spines above on either side which are only about half as long as the tibia is thick. Upper apical spurs decidedly removed from the middle ones. Middle inner spur almost as long as metatarsus, the upper a very little shorter ; the undermost not quite half as long as the middle one. Middle outer spur about two-thirds as long as the inner one, the upper outer hardly two-thirds as long as the middle, the undermost scarcely half as long as the uppermost.

Ovipositor by one-fourth shorter than hind femur, rather thick and straight in basal part, moderately upcurved distally, sharply pointed at apex ; valves with complete margins, the lower ones somewhat shorter than the uppermost. ♀ subgenital plate rather large, about trapezoidal, a little wider at base than long, with slightly S-curved lateral margins, hind margin slightly rounded and very slightly emarginate in the middle.

Easily distinguishable from all the hitherto known species by means of the key above. If one should prefer to place it with *Onosandrus*, it would come between *crassipes* and *saussurei*, differing from both by the shape of ♀ subgenital plate and by the decidedly shorter ovipositor.

Libanasa femoralis (Brunner v. W.).

Not represented in the collection before me.

Libanasa impicta (Stål).

Syn. : *Onosandrus impictus* Stål, *Borborothis impicta* Kirby.

1 ♂, 1 ♀ (det. Karny), Cape Colony, Port St. John's, G. C. Shortridge.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	8·3	41·0	8·7	10·2	30·4	25·0	..
♀	9·0	37·3	10·0	11·4	33·8	30·4	±22·0

Since Stål's original description this species has not been studied again by anyone. Stål placed it (in 1876) with *Onosandrus*, with which it agrees very well in general appearance, but differs by the presence of distinct tympana on fore tibiae, as has already been stated by Stål. Brunner did not know this species, except from Stål's description, and placed it as a questionable synonym of his *Borborothis opaca*, which, I hold, is certainly erroneous. I cannot believe that such an observant author as Stål could have overlooked the coarse wrinkled sculpture of the abdominal tergites which is so typical in *Borborothis*; my opinion on this point is supported by the fact that the two specimens now before me agree very well in every respect with Stål's description and have the abdominal tergites quite smooth, thus belonging to *Libanasa*, not to *Borborothis*. Kirby quoted *impicta* as a different, good species of *Borborothis*. Otherwise I can find no reference to it elsewhere in literature.

The two specimens before me are coloured yellowish brown, having the thoracic and abdominal tergites diffusely darkened along hind margins, the pronotum along fore margin as well. General appearance very similar to *Libanasidus vittatus*, but the hind marginal bands much less distinct, and the mandibles simple also in the ♂. Fastigium of vertex about one and a half times as wide as first antennal joint, with a few dot-like impressions on surface. Hind femora strong, similarly shaped to those of *Onosandrus natalensis* (fig. 18); above with some very minute spinelets as in *Borborothis opaca*, though much smaller; below with some still smaller ones beyond the middle. Anterior genicular lobes and the middle outer ones rounded and unspined; inner genicular lobes of middle and hind legs each with a small, sharply pointed spine just before apex, the posterior outer ones with a sharp spinelet at lower margin before the middle. Fore tibiae with a distinct tympanum on either side; above, besides the apical spines, with one spine on the inner side, unarmed on the outer side. Middle tibiae above with 2 spines on the outer side and with 3 on the inner side, and the usual apical spines. Hind tibiae decidedly curved in ♂, straight in ♀, with 7 spines on either side above which are scarcely half as long as the tibia is thick, the last of them placed just before the upper apical spur; the row of spines beginning on the inner side further basally than on the outer side; below. besides the preapical spines, with but one spinelet on either side at about the middle. Apical spurs of hind tibia relatively thick; the upper inner one as long as or somewhat shorter than metatarsus, the middle one somewhat shorter than the uppermost, the undermost but

about half as long as the middle one. The outer spurs gradually decreasing in length from the upper to the lower spur, the uppermost but little more than half as long as the upper inner one.

♂ subgenital plate decidedly longer than broad, transversely truncate at apex; styles large, depressed, longitudinally excavate on lower surface. Horn-shaped processes of anal valves as in *Borborothis opaca*, but somewhat less divergent.

Ovipositor of the ♀ before me broken before apex, so that I cannot state its length exactly; in any case long and slender, slightly upcurved. ♀ subgenital plate of the shape of an equilateral triangle, but rounded at the apex and even slightly emarginate in the middle of hind margin, a fine median longitudinal keel running over its entire surface.

Gen. Libanasidus Péringuey.

One species only, viz. :—

Libanasidus vittatus (Kirby).

Compare Péringuey, *loc. cit.*, p. 425.

1 ♂ (det. Péringuey), Barberton, H. de Beer, 1905; 1 juv. ♂, No. 49, 1 juv. ♀, No. 69 (det. Péringuey), Transvaal, Leydenburg Dist., T. Ayres, purch. 1879; 1 ♀ (det. Péringuey), Barberton, Kolbe, 1897; 1 ♀, Transvaal, Leydenburg, Krueger.

Anterior genicular lobes on either side and middle ones inside rounded, unarmed. Those of middle and hind legs inside (=caudad) each with a rather acute, blackish-tipped spine just before the rounded and somewhat inwardly curved apex. Outer lobes of hind knees rounded and spineless at the end, but at lower margin with a distinct spinelet just before the middle. Hind tibiae quite straight in ♂, slightly S-curved basally in ♀; above on either side with 8 (quite exceptionally 7 or 9) dark-tipped spines, the last of them situated just before the upper apical spur and very much reduced in size, so that it is sometimes hardly distinguishable even under the magnifying lens; the others long and slender, acutely pointed, fully as long as the tibia is thick; below on the inner side with but one spinelet in the middle and one just before the lower apical spur, on the outer side 2 (rarely 3) more such between them at about equal distances. Apical spurs long and slender, acutely pointed, the uppermost decidedly remote from the middle ones. The inner upper spur as long as or even somewhat longer than metatarsus, the middle one equally long or a little shorter. The undermost only about half as long as the

middle one. Outer spurs somewhat more than two-thirds as long as the inner respectively.

♂ cerci well developed. Anal valves quite similar to those of *Faku dregii* (see fig. 12). Subgenital plate almost quadrate, but narrowed distally, transversely truncate at apex; styles strong, more than half as long as subgenital plate.

Ovipositor rather blunt at apex, valves with complete margins, the undermost a little shorter than the upper ones. ♀ subgenital plate trapezoidal, as long as wide at base, not quite half as long at the apex as at the base, apical margin straight or slightly excavate.

The larval specimens agree with the fully grown ones in every respect, *i.e.* in colour, in shape of mandibles, in armature of legs, and in the sexual characters, thus being distinguishable from them by the smaller size only.

Gen. Borborothis Brunner v. W.

This genus differs from all the others at a glance by the strongly rugulose and punctate sculpture of the abdominal dorsum. Further, the spines of the hind tibiae are strikingly long. The presence of distinct tympana is also typical for but few other African genera besides *Borborothis*. As to the outline of fastigium verticis, I cannot state any certain and well-defined difference between *Borborothis* and *Libanasa*, though Brunner has placed them by means of this character in different groups; the surface of fastigium verticis, however, shows in *Borborothis* a slight vertical impression which is absent in *Libanasa*.

Key to the Species of Borborothis.

1. Inner genicular lobes of middle and hind legs just before the apex with a distinct, sharply pointed spinelet; outer lobes of hind knees with a similar one on lower margin . . . . . *Borborothis brunneri* Bolivar.

1′. All genicular lobes rounded, unspined.

2. Hind legs relatively more slender. Face reddish brown. Tibiae red-brown like femora . . *Borborothis opaca* Brunner v. W.

2′. Hind legs relatively thicker and stronger. Face blackish. Tibiae dark brown, decidedly darker than the femora *Borborothis punctulata* (Kirby).

Borborothis brunneri Bolivar.

1 ♂ (det. Karny), Coldstream, Humansdorp, 1912, L.P.; 1 juv.

specimen without abdominal apex (det. Karny). Cape Town, Lightfoot, February 1915.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.
	mm.	mm.	mm.	mm.	mm.	mm.
♂	6·5	25·3	7·0	8·0	19·5	18·5
Juv.	5·0	±16·0	4·7	6·2	15·0	13·7

These two specimens are very similar in general appearance to *opaca*, but come under *brunneri* by the distinctly spined genicular lobes (of middle legs inside and of hind legs on either side). Otherwise I cannot state any certain and well-defined difference from *opaca*. The above-named character is very distinctive and surely sufficient for specific separation. Hind tibiae with 8 spines above on either side, the longest of them being longer than the tibia is thick, moreover with one minute spinelet just before the upper apical spur. Middle inner spur not (juv.) or little (♂) shorter than the upper one. ♂ sexual characters practically as in *opaca*, but the horn-like processes of anal valves directed upwards beyond the end tergite are subcontiguous till apex, not gaping distally as far as in *opaca*.

Borborothis opaca Brunner v. W.

1 ♂, 1 ♀ (det. Karny), Oudebosch, Caledon, 1500 ft., K. H. Barnard, January 1919; 1 ♂ (det. Karny), Stellenbosch, L.P., 1887, with a label by an anonymous author: "*Onosandrus Saussurei* Wattenw."; and one by Griffini: "Remarquable aussi! Ayant des foramina aux tib. ant. ne pourrait etre *Onosandrus*, mais devrait se placer près du gen. *Aistus*"; 1 juv. (det. Karny), Stellenbosch, Barnard, 1913.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♀	6·8	24·4	7·0	7·8	19·0	18·0	16·7
♂ Oud.	5·5	20·8	6·5	7·3	17·7	17·4	..
♂ St.	5·2	23·0	5·3	6·3	15·3	15·0	..
Juv.	4·0	13·7	4·0	4·6	10·5	10·8	..

There is no doubt that the specimens before me are specifically

different from those placed under the preceding species, as all their genicular lobes are rounded and quite spineless throughout. I take them also to be different from the specimens mentioned below as *punctulata*, though I am not quite certain in this latter respect. The hind legs are somewhat more slender than in those, where they agree rather better with the figure given by Brunner. Nevertheless, I do not place those but the specimens enumerated above as *opaca*, and I do so for the reason that the length of the ovipositor agrees better with *opaca*, and the face is not as strongly darkened as in *punctulata*. Middle tibiae in all the three species before me above with 2 spines on the outer side and 3 on the inner side, excluding the apical spines. Hind tibiae slightly S-curved in the ♂, possessing in either sex, besides the small spinelet just before the upper apical spur, further 6 to 8 (usually 7) spines on the outer side above and 7 to 8 (usually 8) on the inner side, which are decidedly longer than the tibia is thick ; the row of spines below on the outer side already begins before the middle (as may be seen also from Brunner's figure), and the spines are better developed than is usual in other cases, though much smaller than those of the upper edges. Middle inner spur of hind tibiae hardly or but a little shorter than the uppermost ; the difference by no means so great as in Brunner's figure. Sexual characters as described by Brunner ; I here figure the ♀ subgenital plate (fig. 23).

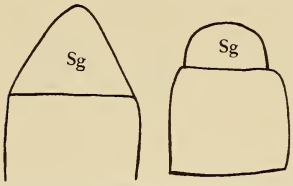

Fig. 23.—♀ subgenital plate of *Borborothis opaca* (left) and *punctulata* (right).

Borborothis punctulata (Kirby).

This species has been described by Kirby as *Carcinopsis* and compared with *femoralis* and *fusca*—without doubt erroneously so. What Kirby states about the shape of the fastigium verticis and of the abdominal sculpture makes it certain that his species belongs to *Borborothis*. I have, however, seen Kirby's type specimens in the British Museum of Natural History, but at the time I had no other *Borborothis* before me for comparison, and I could therefore compare it only with *Libanasa* and *Libanasidus*. My notes are thus not sufficient for a certain definition of the species, and thus I have to fall back on Kirby's description. From this I cannot make out with certainty whether we really have to do with a good species different

from *opaca*. To *punctulata* I refer—with some doubt, however—the following two specimens of the material now before me :—

1 ♂, 1 ♀ (det. Karny), H. W. O., Rondebosch, C.P., 1883.

	Width of head.	Length of body.	Pron.	Fore fem.	Hind fem.	Hind tib.	Ovipos.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
♂	6·5	20·8	6·5	6·8	17·5	15·5	..
♀	7·4	26·2	7·8	7·5	18·2	17·3	11·7

Very similar to the *opaca* specimens before me, but decidedly more massive and with darker coloration. What Kirby means by the "two strong converging carinae" I cannot make out, unless these may perhaps be the two usual keels of the mandibular base. Genicular lobes all spineless as in *opaca*. The ♂ sexual characters do not show any striking difference from *opaca*. Ovipositor decidedly shorter and heavier than in *opaca*. ♀ subgenital plate (fig. 23) is also shorter and relatively broader; but I cannot state with certainty whether, in fact, we have here to do with a specific difference : it is not impossible that the unusual shape is but apparent through the subgenital plate having perhaps been somewhat telescoped under the preceding sternite.

Subfam. SCHIZODACTYLINAE.

Represented in Africa by one genus only, viz. :—

Gen. Comicus Brunner v. W.

Only one species known at present in Africa :—

Comicus capensis Brunner v. W.

Four specimens now before me (det. Karny) with the following data : S.W. Africa, Otjituo, R. W. Tucker, January 1920 (the biggest specimen); Bushmanland, Jackals Water, C.P., Lightfoot; Kaross, S.W.A., Mus. Exped., February 1925 (two specimens).

Fore and middle tibiae very strongly tumescent, but quite spineless. First hind tarsal joint on either side with a slender styliform process, and the apical spurs of hind tibiae also of the same shape (fig. 24).

By these characters the species is easily and with certainty distinguishable from *inexspectatus* (Asia Minor), which agrees in this respect with *Schizodactylus*, as has already been pointed out by Werner in his original description. Brunner's statement for

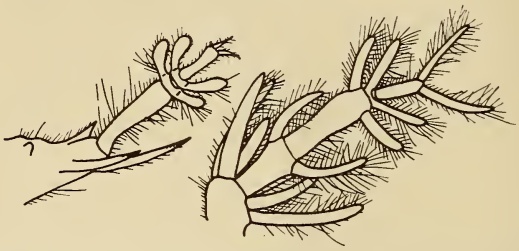

Fig. 24.—Dorsal view of left fore and hind tarsus of *Comicus capensis*.

capensis, "Tarsi omnes articulo primo tereti, gracillimo, in pedibus posticis medio spina longa armato," is probably due to a fault of observation or to an abnormality.

Subfam. RHAPHIDOPHORINAE.

Of this subfamily, too, only one genus is at present known from Africa, viz. :—

Gen. Speleiacris Péringuey.

This genus is of extraordinary interest, as it is the only Rhaphidophorine from the whole of Africa (including Madagascar), and has up to the present not been studied by any author except Péringuey. Though he compared it in his description with *Dolichopoda*, he nevertheless placed it—curiously enough—among the Mimnermi, viz. between the genera *Faku* and *Onosandridus*. In general appearance it indeed resembles *Dolichopoda* very much, as may be seen from Péringuey's very good figure (*loc. cit.*, pl. xlii, fig. 1), but this of course conveys nothing with respect to the actual relationships. We find very similar types—as has already been pointed out by Scudder more than fifty years ago—in all parts of the world : *Dolichopoda* in Europe, *Diestrammena* in Eastern Asia, *Hadenoecus* in North America, and *Pleioplectron* in New Zealand, and these belong to quite different groups of Rhaphidophorinae, as I have just shown in a recent paper. We have to do here with convergent types of adaptation only.

As a matter of fact, *Speleiacris* is not at all closely related to

Dolichopoda. Its closest allies are to be found among the New Zealand species! This is also the case with *Onosandrus*, which is also represented in South Africa and in New Zealand. According to Brunner's key, *Speleiacris* should come between *Diestrammena* and *Neonetus*; in this position the South American genera *Heteromallus*, *Udenus*, and *Parudenus* (Falkland Islands) are excluded from comparison. In the key to the New Zealand species (Hutton, Trans. New Zeal. Inst., xxix, p. 224, 1897), *Speleiacris* should be placed close to *Pleioplectron* and *Neonetus*, agreeing in general appearance better with the former than with the latter. By the characters of the tibial armature, as used by Hutton, *Speleiacris* differs from both; for *Pleioplectron* has "fore and middle tibiae with two pairs of apical spines, of which the superior is much longer," whilst *Neonetus* is characterised by "fore tibiae with a pair of inferior, and middle tibiae with a pair of superior, apical spines." In *Speleiacris*, on the contrary, fore and middle tibiae show underneath only one pair of needle-like spines at apex, whilst there are above but two very minute spinelets scarcely distinguishable even under the microscope. In fact, the armature of the legs alone is sufficient to distinguish *Speleiacris* with certainty from all the other Rhaphidophorine genera. As Péringuey has said very little about this character, I will discuss it here somewhat more in detail.

All femora spineless. Fore and middle genicular lobes on either side with a needle-like movable spine, which is equally long on both sides on the middle knees, whereas the inner one is somewhat shorter than the outer on the fore knees. Lobes of hind knees without movable spines, but the inner one produced into a rather sharp point at apex. Fore tibiae, just beyond the middle, with a pair of short movable spines below, but as these are easily broken off, they are still present in but few of the tibiae before me. On the middle tibiae I cannot distinguish any such spines at all. Apex of fore and middle tibiae as described above. Hind tibiae set above almost throughout their whole length with two rows of very minute, closely set spinelets, some of them being longer than the others (fig. 25); below very densely haired, so that I cannot state whether there are minute spinelets among the hairs or not. Upper apical spur of hind tibiae more than half as long as metatarsus (fig. 25), the inner one somewhat longer than the outer; middle apical spur hardly one-third as long as the uppermost, the undermost still shorter and weaker. Metatarsus and second tarsal joint of hind legs very densely haired throughout the whole length (not indicated in my figure), but apparently without

any spines, except two sharply pointed apical ones, situated side by side close to each other and directed straight backwards.

The armature of the metatarsus excludes from comparison all the genera of the Northern Hemisphere and places the genus without any doubt with the Macropathini. Among these, *Pleioplectron* and *Neonetus* only could be mistaken for *Speleiacris*, but they differ by

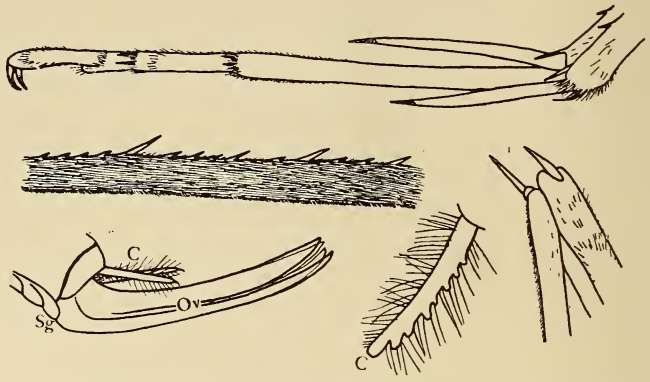

Fig. 25.—*Speleiacris tabulae* (types). Above: Hind tarsus, seen obliquely from above. Middle: Middle part of hind tibia. Right below: Middle knee. Below middle: Left ♂ cercus in dorsal view. Left below: Ovipositor. The two last figures less magnified than the others, and the last still less than the preceding.

the number and arrangement of the apical spines of fore and middle tibiae, as has already been pointed out above.

Of this genus only one species is at present known, viz.:

Speleiacris tabulae Péringuey.*

1 ♂ (type), Table Mountain, K. H. Barnard; 1 ♂ (paratype), Table Mountain, Grottoes, F. Werts, 1909; 1 ♀ (allotype), Cape Town, Table Mountain, in cave 100 ft. below surface, R. Marloth, December 1900; 1 ♀ (paratype), Table Mountain, K. H. Barnard.

Not only is the armature of the legs (as described above for the genus) very remarkable, but also the sexual characters. These have already been described by Péringuey in some detail. The ♂ cerci are striking at a glance by the lobes, shaped like the teeth of a saw, along their inner edges, which I figure again somewhat more enlarged

* See additional notes by Dr. A. J. Hesse, p. 273.

(fig. 25) than in Péringuey's figure. I do not know of any other genus with a similar structure, which I regard as a rudiment of a previous segmentation (compare *Lezina* and *Pristoceuthophilus*). Styles hanging down backwards and being somewhat arcuate with the convexity upwards and backwards. Cerci of ♀ simple, without any lobes like those of the ♂, but ending in a sharp spine-like point at apex. Ovipositor (fig. 25) somewhat upcurved at base and near apex, but perfectly straight in between; valves with integer margins, acutely pointed at the tip, the upper ones hardly longer than the undermost. ♀ subgenital plate transversely truncate at the end and slightly triangularly excised in the middle of hind margin. Preceding sternites each bearing two slightly convex areas of semi-elliptical outline, transversely truncate anteriorly and strongly rounded posteriorly, very well defined all round, occupying almost the whole length, and together almost the whole width of the respective ventral plates.